

American Aviation

The Independent Voice of American Aeronautics

DECEMBER 1, 1945

Will Russia Play Ball?

BERLIN—Bomb-wrecked Berlin is the most important aviation center in the world today. Montreal is not. Washington and London are not. But the fallen capital of Berlin very definitely is.

The future of the world depends upon the future of American and Russian relationships.

Fortnightly Review

Aviation is one of the most, if not the most important, keys to American-Russian relationships.

Today Berlin is the laboratory, the testing machinery, the creative center, for working out future American-Russian relationships in civil aviation.

History is being made here, history that directly affects every aircraft and accessory manufacturer, every airline, and every aviation development in the United States.

Before coming to Berlin, one hears just about everything conceivable about the Russian attitude toward civil aviation. In Vienna, Rome, Paris, Copenhagen, Stockholm and points en route, one hears that the Russians are blocking every move the U. S. makes in civil aviation, that they confiscate our aircraft, that they are shooting at our transport planes in the Berlin area, that they push us around, that we never will obtain permission to fly into Russia, that we might as well start the war over again, and so on and so forth deep into the night at every gathering.

The average American is immature when it comes to international relationships. He is an amateur. He overlooks differences in languages, in concepts, customs, thinking, backgrounds and history. He is impatient. He wants things to happen now. And he is guilty of a tremendous amount of loose talk, hasty conclusions and petty quibbling when it comes to discussing our civil aviation problems with Russia.

Thus it is that in this historical laboratory of Berlin, where patterns of far-reaching significance are possible of establishment, that the utmost care and the utmost thinking must be exercised. And it is a genuine pleasure to report that progress is being made.

The over-all U. S. military picture in Germany is a shameful mess. It is bumbling, complex to a fantastic extreme, unworkable and a disgrace to the country which exerted such tremendous production and fighting effort to win the war.

But the United States can be grateful to the top aviation policy man is Major General Robert W. Harper, director of the armed forces division (formerly the air

(Turn to page 6)



New President of LAMSA

Allan F. Bonnalie has been named president and general manager of Lineas Aereas Mexicanas, S.A. (LAMSA), Mexican subsidiary of United Air Lines. A pilot since 1911, Bonnalie had been on leave from United since 1941 to serve as a commander in the Navy.

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Peace on Earth...

As once again dawns this hallowed hour which for centuries
has symbolized the recurrent hope of mankind for universal understanding,
we tender gratitude to those stout hearts who have given so much
that the radiance of this day shall not lose its luster.

We offer our sympathy to those whose dear ones remain but a memory...
and we rejoice for those who have returned.

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we have built fighter planes whose records stand unmatched
and now, when all the men are out of all the fox holes all over the world,
it will be our sole aim to make aircraft whose purpose is to propagate the spirit of
peace on earth... good will towards all men.

Alfred Harbo

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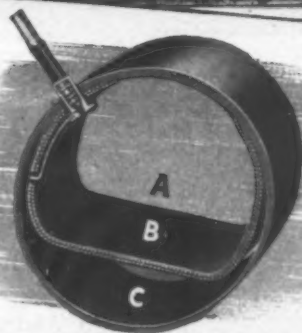
This ingenious inner tube is a development of the original Goodyear LifeGuard, a two-compartment tube. In nose-wheel tires where a failure would almost certainly cause extreme damage, if not casualties, the inner wall of the Dual-Seal tube "bridges" over a break in the outer section.

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Volume 9, Number 13

The Independent Voice of American Aeronautics

December 1, 1945



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American Aviation Daily: The only daily news service for the aviation industry. Published daily except Sundays and holidays since 1939. Dispatched via airmail or surface mail for overnight delivery in the United States. Subscriptions: \$15 one month, \$170 one year. Airmail delivery to points outside the United States at additional cost to cover postage. Service Bureaus available to all subscribers. CLIFFORD GUEST, Managing Editor.

International Aviation: A weekly newsletter of aviation trends and news in foreign countries. Published on Friday of each week and dispatched via first-class surface mail. Editorial representatives in foreign capitals. Subscriptions: \$100 one year (\$2 issues). Airmail delivery available at additional cost to cover postage. Service Bureaus available to all subscribers. FRANK M. HOLZ, Managing Editor.

American Aviation Directory: Published twice a year, Spring and Fall. Complete reference data on administrative and operating personnel of airlines, aircraft and engine manufacturers, accessory and equipment manufacturers, organizations, schools, U. S. and foreign aviation groups and departments, etc. Completely cross-indexed by companies, activities, products and individuals. Single copy \$5.00; annual subscription (two successive editions) \$7.50. Spring-Summer 1945 issue now available. HELEN L. WALSH, Managing Editor.

American Aviation Traffic Guide: Monthly publication of airline schedules, rates and regulations for passenger and cargo transportation by commercial air transport. Supplements furnished subscribers covering changes occurring between issues. Subscriptions U. S. and Latin America \$5.00 one year (12 issues and supplements); Canada \$5.50. Published and revised from editorial offices at 139 North Clark Street, Chicago 2, Illinois. (Telephone: State 2154). H. D. WHITNEY, Managing Editor.

American Aviation Reports: Current financial and traffic statistics on all domestic airlines as reported to the Civil Aeronautics Board. Includes monthly and semi-annual summaries. Yearly subscription comprises over 500 separate reports. \$175 one year; \$100 six months; \$20 one month. Special statistical and research work for subscribers at cost.

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(Continued from page 1)

division) of the Group Control Council. While irresponsible Americans in uniform spend time beefing (to use a mild expression) about the Russians, Bob Harper is using brains and tact in working out practical and important civil aviation relationships with the Russians and the French and the British.

It is easy to sit in Paris and cuss out the Russians for interning American aircraft forced down in Russian-controlled territory, or to raise Cain because the Russians shot up red flares at American aircraft a few miles off the Magdeburg-Berlin airway corridor, or to hangar-fly the Russians for requiring two weeks' advance clearance of transport planes flying to Budapest.

It isn't so easy, but it's a lot smarter, to try to understand the complex Russian methods of doing business and to reason out the many "whys" of what is going on in eastern Europe today. Confidence breeds confidence. The Russians are peculiar—to our way of thinking—but basically there is reason to be optimistic in reaching a sane, practical agreement on civil aviation problems.

This agreement will not be reached in PICAQ in Montreal, but in the practical testing laboratory of Berlin. And as is appearing in Berlin today, our major problems may be more concerned with reaching agreements with the British than with the Russians.

The first successful test passed by the four-power Group Control Council is the establishment of an air traffic control center for Greater Berlin, regulating the air traffic of Russian, American, British and French aircraft. But one doesn't call it a traffic control center, for the word "control" has a much more severe meaning in Russian than it does in the English language. When a traffic control center was proposed, the Russians balked sharply. When the whole idea was finally explained in detail, that traffic regulation is necessary for safety, the Russians agreed to the entire principle. The name adopted is Aircraft Safety Center. As this is written technical committees of the four powers are at work drafting details of the new aircraft safety machinery and the Russians have asked that a teletype tie-in be made between the American Tempelhof Airport and the Russian Adlershof Airport for exchange of weather information.

Thus history is in the making. Aviation relationships begin with simple things. A jointly-operated traffic center, a teletype link, exchange of weather information, the exchange of technical views—all this is basic groundwork toward a much greater understanding.

One handicap of the Russian aviation officials should sound familiar to our own military aviation, and it is important that this handicap be understood. Russian aviation has been under the stern wing of the Russian ground forces. And this, more than anything else, has accounted for the large number of "incidents" which arouse the ire of American airmen.

Good--But Not Enough

THE OFFICIAL revelation recently that there was such a thing as an Air Coordinating Committee was somewhat overdue, but it was also very timely. The ACC is in the right direction—but does not go nearly far enough.

The ACC is composed of the top aviation officials of four government agencies—War, Navy, State and Commerce. But the missing link is a strong official coordinator. True, the ACC has the power to issue directives, but unfortunately its directives are neither being sent down the line to the men in the field, nor are those directives being carried out. It is all well and good for four government agency men to sit down and make decisions, but it is nothing more than a tea party unless there is power behind the decisions.

The United States government is rapidly becoming the same sucker it was after the last war—it is losing much that it could have gained. And the reason is lack of enforcement of the plans. In aviation we need coordination, yes, but we need an executive with power to follow through. If the President were to recognize the ACC with an executive action appointing a well-paid top man to direct the efforts of the four-way committee, then we would feel more secure that U. S. civil aviation is going places. ACC is good—but not good enough.

Required Reading

C. R. SMITH'S provocative article, "What We Need is a Good Three-Cent Air Line," which appeared in a recent issue of the *Saturday Evening Post*, has created no little comment in air transport circles. It should be required reading for everyone in the industry.

As the title implies, C. R. recommends that airline fares must come down to a three-cent-a-mile level if air transportation is to reach the masses. And this it must do, as he points out in this excerpt:

"The airlines are used to selling tickets to movie stars and big-business executives. Many air travelers ride on expense accounts. We should be selling seats to the millions who have to pay for their own tickets out of middle-class incomes—the housewives, small businessmen, farmers and mechanics."

This would be accomplished under C. R.'s formula, first by offering a day-coach type air service, and secondly by cutting costs. The latter is the toughest problem, he points out, because of company pride. But slashes could be made in ground services which are now being duplicated by each carrier. And the public is paying for this duplication. The answer is consolidation, as Smith points out.

It is significant that an airline executive of his capacity should speak out on this controversial subject at this time.

C. R. debunks the theory that the airlines must wait another couple of years for radar and other developments in order to attain all weather flying. "We could now fly more dependably if we'd make full use of lights and radio, the everyday aids to navigation already in hand or available."

C. R. has done a service for the industry.

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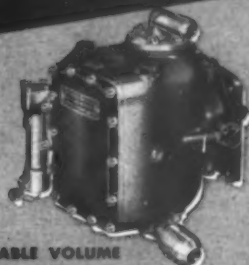
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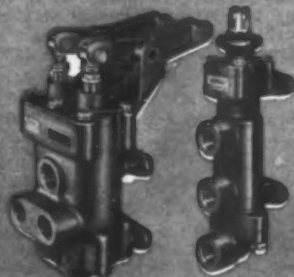
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WHO'S WHO IN LATIN AMERICA. Edited by Ronald Hilton. 3d ed., rev. & enl. 7 vols. Stanford University Press, Stanford Univ., Calif. & A. N. Marquis, Chicago, Ill. Part II: \$1.50 (paper); \$2.25 (cloth).

This third edition is to be published in seven parts, with Part II (Central America and Panama) now available and Part I (Mexico) to be published in 1945. A total of 8000 biographical sketches of outstanding Latin American men and women in business, education, public life and the professions are included in this valuable reference set. Qualification for admission is residence and not nationality as in previous editions. Information and format similar to that of Who's Who in America.

AIR TRAFFIC CONTROL By Glen A. Gilbert. 274 pp. \$5. Ziff-Davis Publishing Co., New York.

In this book the chief of the Air Traffic Control Division, Civil Aeronautics Administration explains the organization, equipment and procedure involved in present air traffic control and analyzes its problems and limitations. He also offers a blueprint for the future making specific recommendations in line with present CAA thinking.

THE PAN AMERICAN YEARBOOK 1945. By Pan American Associates. \$29 pp. Illustrated. Published by Pan American Associates, 1150 6th Ave., New York. \$5.00.

This is the first edition of an annual reference guide to the countries of the Western Hemisphere, compiled particularly for usefulness to persons interested in inter-American trade. The book is in three main parts. Part I is a general section with a condensed history of the American nations from colonial times through World War 2 and a survey of

economic and trade areas. These surveys are quite sketchy, covering too much in too little space. Largest section is Part 2, containing separate surveys of each country and foreign possession. Treatment is concise and well-organized. Part 3, a "Who's Who in inter-American trade", lists the names and addresses of over 25,000 established firms, listed by countries within each of 13 major industrial groups, including Aviation, Travel and Communications, Automotive, Oil and Mining, and Finance. Under Aviation are listed firms supplying aircraft, accessories, and petroleum products.

AVIATION FACTS AND FIGURES, 1945. Aircraft industries association of America, inc. Rudolf Modley, editor. New York, McGraw-Hill Book Co., 1945. 173 pp. \$2.50.

This well-arranged and indexed handbook of aviation statistics has been compiled from many sources. Emphasis is on the aircraft industry but other phases of civil and military aviation are included. Most of the material is arranged in tabular form and covers thru 1944 with comparative figures for previous years where available. Sources for figures or for material from computations are made are given following each table. Book should prove to be a reliable and valuable quick-reference tool for all interested in aviation progress.

AVIATION: WHAT EVERYONE SHOULD KNOW. By Devon Francis. The Bobbs-Merrill Company. 220 pp. Illustrated. \$2.50.

A veteran aviation writer and a pilot in his own right, Devon Francis has undertaken the difficult task of making simple explanation of the science of flying. He has done a good job of it. The 16 chapters explain the makeup and workings of the airplane, flying instruction, weather and navigational facilities, gliding, and airline transportation. The book contains a glossary of aeronautical terms, and lists of aviation books and periodicals, aviation organizations and manufacturers.

(Many of these booklets may be obtained from American Aviation Book and Periodical Dept., American Bldg., Washington 4, D. C.)

"Practice and Procedure in New Route Cases Before the Civil Aeronautics Board" is the subject of a booklet by Julian T. Cromelin, attorney with the CAB. Reprints are available or the material may be obtained in mimeograph form.

A study of commercial aviation in Mexico, made by the Air Transport Information Division of the CAB's Economic Bureau, is now ready for distribution. With an assortment of comprehensive maps, the study outlines the role of international and domestic agreements, industrial airlines, common carriers, tariffs, equipment, airports, and air mail services in the Mexican air transport picture.

To the Editor:

Is my face red! On October 5, 1945 I wrote a letter to you protesting certain statements attributed to Mr. E. J. Robbins, wherein he was supposed to have accused the State of Utah of attempting economic regulation of air carriers. When I read the article, I was so darned mad that I immediately wrote to you, Mr. Robbins, and Mr. Schroeder regarding the matter. I unintentionally referred to Part 42 of the Civil Air Regulations which of course pertains to safety and not economic regulation.

This letter is being written to let you know that we are not quite as misinformed as the

Wings of Yesterday

Twenty-Five Years Ago

The aviation field at Camp Stotezenberg Tambango in the Philippine Islands was named Clarke Field, in honor of Major Harold M. Clarke of the Air Service. (Nov. 24, 1920)

The first airplane race for the Pulitzer Trophy and for Valentine Liberty Bond prizes was held at Mitchell Field, Garden City, L. I. (Nov. 25, 1920).

At the annual meeting held in New York City, the National Aircraft Underwriters Association passed a resolution urging Federal air laws. (Nov. 30, 1920)

The police of Winnipeg, Canada, reported that airplanes were being used by an organized band of bootleggers in smuggling goods across the United States border. (Dec. 2, 1920)

The United States Air Mail set a new record in carrying 16,000 letters from Chicago to New York in 5 hours and 58 minutes. (Dec. 3, 1920)

James Means, a pioneer in aviation, whose writings inspired the Wright brothers, died at his home in Boston, Mass. (Dec. 4, 1920)

Fifteen Years Ago

Ruth Nichols, flying a Lockheed Vega, Pratt & Whitney Wasp motored, covered the distance from New York to Los Angeles in 16 hours, 59 minutes, 30 seconds flying time. (Nov.-24-Dec. 1, 1930)

Pan American Airways, Inc., inaugurated air mail service between Paramaribo, Dutch Guiana, and Santos, Brazil. (Nov. 27, 1930)

The International Aeronautical Exposition opened in Paris, France for a two weeks showing. (Nov. 28, 1930)

Pan American Airways, Inc., inaugurated the longest regular air mail service over water by re-routing the Miami-Cristobal service to include Cienfuegos, Cuba and Kingston, Jamaica. (Dec. 2, 1930)

The Herbert Schiff Trophy for naval aviation was awarded to the Fighting Plane Squadron 3-B. (Dec. 5, 1930)

first letter would make us appear. However, we feel almost exactly the same in regard to safety regulation as we do toward economic regulation.

We are opposed to the economic regulation of non-scheduled air carriers and we are also opposed to any form of safety regulation except that which is absolutely necessary to safety.

I hope this will clarify our position as far as regulations are concerned.

Yours sincerely,

JOSEPH S. BERGIN,
Director of Aeronautics,
Salt Lake City, Utah.

Editor's Note: Reader Bergin's letter refers to an article, "Brickbats Fly as Minnesota Group and CAA Officials Tangle Over Regulation," which appeared in AMERICAN AVIATION Sept. 15. His previous letter to the editor appeared Oct. 15.

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INTERNATIONAL AVIATION

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Trend of

(As compiled and edited by Clifford Guest,

Short Aviation Observations: The British will not be content to let the B-29 Guam-to-Washington non-stop record stand. . . . They're reported to be readying a Mosquito for an England-Australia non-stop attempt—some 10,000 miles. . . . The Washington dope is that Gen. Hap Arnold's resignation will be accepted by Jan. 1, that he will retire to his farm at Sonora, Calif., and will be succeeded by Lt. Gen. Carl A. (Tooney) Spaatz. . . . On Capitol Hill the Navy will never say die. . . . Chairman David I. Walsh (D., Mass.) says his Senate Naval Affairs Committee will conduct its own hearings on merger of the Armed Forces, despite President Truman's promised message in favor of immediate merger. . . . On this score, Collier's Magazine last fortnight dug up proofs of an old article by Sen. Harry S. Truman favoring merger, and sent it out to other magazines and newspapers. . . . The long quiet spell during which there has been little talk about Ed Warner's successor on CAB has renewed airline fears that it would turn out to be a strictly political appointment. . . . The theory persists in Washington that Democratic Chairman Hannegan, miffed at not being consulted on earlier Truman appointments, got a promise from the White House that he could name appointees of "lesser importance." . . . And that the CAB job, coming along about that time, was bracketed as one of lesser importance. . . .

Why They Want Out: If the Army wants to know why its men are rushing to get back into civilian life, here are a few reasons: (1) The AAF colonel, one of oldest in point of service, disgruntled because he's never received a star, who was c.o. of an airport in Europe (and still in ETO) and who carried arrogant discipline to such an extreme that he was laughed at behind his back and had worst morale seen in ETO; he made life tough for everyone under him. (2) The Wall Street AAF colonel who had a fine bunk in the States during the war who got a round-the-world junket before getting out of the Army and who threw his rank and weight around in Europe to everyone's disgust. (3) The internationally-known scientist who asked AAF for a C-54 and crew, and got it, in the furtherance of legitimate research and then brazenly abused his privilege by ordering the C-54 sent hundreds of miles to deliver a friend's bag, who took the C-54 on luncheon trips in Europe and who treats a four-engined airplane as though it were an automobile; his is the most inexcusable individual waste of the war and he still has the C-54 as his private limousine!

Needless Obstacles Block Superior Equipment:

A spirited battle is going on in some parts of Europe between the British and our AAF over which outfit gets its aircraft fueling equipment in use first. Oslo is one example. The British fueling equipment requires about 4 hours to fuel up a C-54, while U. S. equipment does the job in 20 minutes. It is surprising how many obstacles U. S. officials put in the way of Americans endeavoring to get U. S. equipment installed first in foreign spots—and it means a lot to U. S. air carriers which can't afford to take 4 hours for a refueling job.

Big Company to Bow Out: It won't be ready for formal announcement for some time to come, but one of the biggest eastern airframe companies—one which wound up the war period in an exceptionally good cash position—may bow out of the aircraft field entirely by next summer. This company, which has some very capable top men, is quietly buying into other types of business with a view to dropping aircraft production altogether and carrying on several lines of durable and consumer goods manufacture. It will, however, complete contracts for planes which it holds.

Douglas in the Equipment Race: The Glenn L. Martin Co., once almost exclusively an advocate of the flying boat, made aviation news when it cracked the medium transport market with an order for 35 Martin 30-passenger Model 202's for PCA and 50 for Eastern Airlines. Many prophets interpreted it as the beginning of a shift of the commercial trans-

The News

Managing Editor, American Aviation Daily)

port market from the west to the east coast. Still at stake was the prized order from American Airlines for the medium (30-passenger) transport on which five manufacturers were bidding. If Martin's 202 got the nod from American, the prophets said, it would become the successor of the redoubtable DC-3.

However, you can look for Douglas Aircraft Co. to start coming up with announcements of commercial orders shortly. Donald Douglas has been sitting tight on this phase of his company's operations, but now he seems about ready to take off the wraps. The DC-8 is a very live possibility and Northwest Airlines, for one, has put out a release that its engineers are studying the Skybus for its transcontinental routes. For weeks the airlines have been waiting for the much-postponed flight of the XB-42 (military prototype of the DC-8) and some decisions may hinge on its performance. (Page 58) West Coast reports say sizeable foreign orders are in prospect.

In the equipment race, Consolidated's 110 also is a factor which may put in a strong appearance soon.

Russians Pilot Polish Planes: When the Russians turned over about 25 to 30 lend-lease C-47's to LOT, the Polish Airline, to resume internal Polish air service, they made sure that the planes would not be flown out of the country—they also provided Russian pilots. It seems that whenever a Pole gets hold of an airplane he flies it to Sweden or some other country with no intention of returning.

AIA Squares Off for Peacetime: The Aircraft Industries Association, which is just getting used to its new name as successor to the Aeronautical Chamber of Commerce, meets in annual session Dec. 6 in Los Angeles, to elect directors for the next 12 months, pass upon its budget, and hitch up its belt for its first peace-time year. It has lots to do, and at a meeting of the East Coast directors recently, there were strong expressions of praise for the cohesive program it has developed.

The shadow of the old Aero Chamber hangs over it, however, with two or three East Coast aircraft presidents on record in personal letters complaining that too much attention was given to the West Coast, that the East wasn't getting proportionate benefits from assessments, etc. These complaints appeared to be in the very, very small minority. But they have existed. When *American Aviation Daily* pointed them out in mid-November, the reaction and the inquiries seemed to emphasize a determined resolve by the industry to unite through AIA. It's a healthy sign, and the Dec. 6 annual meeting will be watched for signboards which may well depict the industry's approach to the calendar year 1946.

Here and There During the Fortnight: Laister-Kauffman Aircraft Corp., St. Louis, expects to place on the market a pusher twin-engined, four-place plane for executive use. Some features: cost under \$10,000; butterfly tail; tricycle landing gear; 130 mph cruising speed . . .

Glenn L. Martin engineers are preparing several variations of the basic 202 design, one of them being a "U" version which United Air Lines is looking over . . .

PCA inadvertently misled a lot of people when it announced that the original C-54 "Flying White House" is being converted at the Martin Company for use on its airline . . . PCA erroneously said it had "a special elevator to lift Mr. Roosevelt from ground level into the center compartment." . . . Actually, the plane being converted is the original C-54 used by the late President Roosevelt, and had no elevator. . . . The elevator was a feature of the famed C-54 "Sacred Cow," equipped later by Douglas and still retained by President Truman for presidential use . . .

The Chesapeake & Ohio Railway and the Nickel Plate Road ran quarter-page advertisements in metropolitan newspapers last fortnight asking: "Why shouldn't America have through sleeping car service from coast to coast?" . . . Both carriers said they "stand ready to join with other railroads to start this service without delay." . . . This may be one answer to the inroads of the transcontinental airlines. . . . And it may raise again the question of interchange of equipment among other airlines. . . .



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This Issue

Many Airline Groups Organizing Unions

Carriers Now Hold Contracts with Thirteen Labor Organizations, But More Are Seen Making Inroads

By KENNETH E. ALLEN

UNITED STATES airlines are facing a trend toward more organization among employe groups not now covered by union contracts, an AMERICAN AVIATION survey among the carriers and labor organizations shows.

The carriers currently hold contracts with at least 13 labor unions, and it appears that additional labor organizations will be active in the industry before long.

Most carriers responding to the survey seemed to feel that so-called "white collar workers" (clerical help, etc.) would be the next group to organize on an industry-wide basis.

Northeast Airlines, for example, already has begun negotiations with the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees covering the carrier's clerical workers.

Chicago & Southern reported that it "expected" such organization. Some PCA clerical workers already are members of the Brotherhood, and Eastern reported "rumors and gossip" concerning such organization.

Relations Generally Good

Generally speaking, the labor unions responding to the survey said that their contractual relations with the industry were satisfactory, although one organization qualified this by adding that "this does not necessarily hold true for the past year."

"It seems that these good relations (with the carriers) are becoming a thing of the past, and it is strictly big business from now on out," said D. A. Summers, vice president of Air Line Communications Employees Association.

"It is possible that very good relations will continue with the smaller carriers, but such is not the trend with the larger carriers," Summers said.

"We shall press for suitable wage adjustments, particularly in the lower paid groups. The great majority of airline employes have received no important wage adjustments during the war, and in view of the considerable increase in the cost of living, they have suffered immensely."

ALCEA presently holds contracts with American Airlines, covering flight radio operators, ground radio operators, teletype operators and ground radio technicians and with Braniff and Northwest covering ground radio operators.

Summers said his union was "continually in receipt of inquiries directed for the purpose of ascertaining our interest in organizing and obtaining contracts

for various classes and crafts of employees of numerous airlines."

"We are in somewhat of a transitional period ourselves at this time, but we consider extensive organizational activity in the very near future. This activity will not necessarily be directed at communications workers exclusively, but will probably be in the nature of assisting other groups in their own organizational activities."

A. W. Dwyer, president of Air Line Dispatchers Association (AFL), said with respect to the greater airline employe organization that there was "quite a noticeable increase in the number of individuals and groups interested in employe organizations."

"As an example, membership in the Air Line Dispatchers Association has increased over 30% in the past six months, and indications point to an even larger percentage before the end of the year," Dwyer said.

The problem of jurisdictional disputes among labor organizations holding contracts with the carriers was pointed up by the recent situation at American Airlines in which four unions are engaged in a contest to determine which shall represent American's maintenance and stores department.

The National Mediation Board conducted a representative election on American's properties Nov. 13 at the request of the International Association of Machinists (AFL), the Transport Workers Union (CIO), and the Independent Association of Airline Employees (Independent) to determine which would be the bargaining representative.

No Dispute Seen

Harold R. Harris, vice president of American Overseas Airlines (AMEX), said that while there were no indications of jurisdictional disputes at this time, this situation was shaping up:

"The UAW was certificated by the Mediation Board as the bargaining agent for our maintenance employees after an election last March. Since that time they have branched out and taken in the cafeteria workers. We also have information to the effect that they will soon request that we recognize them as the bargaining agent for our truck drivers, chauffeurs and porters, the latter presently being represented by the United Transport Service Employees of America . . ."

Merger of the Air Line Mechanics Association with the United Auto Workers-CIO appeared to be the focal point of jurisdictional disagreement, and some carriers indicated that they anticipated possible mediation procedures.

Aviation Calendar

Dec. 3-5—SAE National Air Transport Engineering Meeting, Edgewater Beach Hotel, Chicago.

Dec. 8—Sportsman Pilots Association meeting, Carolina Hotel, Pinehurst, N. C.

Dec. 10-11—Third annual meeting, Aircraft Distributors and Manufacturers Association, Hotel Statler, Cleveland.

Dec. 11-12—Western Aviation Conference, Sacramento, Calif.

Dec. 13-14—Airline Finance and Accountant Conference, Dallas.

Dec. 16-17—"International Aviation Day," exhibits, air show, etc., El Paso, auspices Chamber of Commerce.

Dec. 17—Wright Brothers Lecture, Institute of Aeronautical Sciences, 3:30 p.m., U. S. Chamber of Commerce Auditorium, Washington, D. C.

Jan. 4-6—All American Air Maneuvers Miami, Fla.

Jan. 7-8—SAE annual meeting and engineering display, Book-Cadillac Hotel, Detroit.

Jan. 8—IATA North Atlantic rate conference, New York.

Jan. 11-12—Indoor aircraft show in Public Hall, Cleveland, auspices Cleveland Aviation Club.

Jan. 21-22—Northwest Aviation Planning Council, Boise Hotel, Boise, Idaho.

Jan. 29—IAS Honors Night Dinner, Waldorf-Astoria Hotel, New York.

Feb. 12—IATA European Rate Conference, Paris.

Feb. 21—IATA Middle East Rate Conference, Cairo.

April 3-5—SAE National Aeronautic meeting, Hotel New Yorker, New York.

July 19-20—NAA National Convention, Omaha, Neb.

Oct. 14-17—National Aviation Clinic, Oklahoma City.

R. T. Crutchfield, administrative assistant of Chicago & Southern, said his company had been notified by the International Association of Machinists (AFL) that they are challenging the right of UAW-CIO to take over ALMA without the formality of National Mediation Board approval.

At National Airlines, G. T. Baker, president, said that the National Mediation Board already had entered a jurisdictional dispute between the two unions and would hold an election soon. PCA, Western and Delta Air Lines also reported increased activities by the AFL affiliate to organize maintenance employes.

All American Aviation, which holds no union contracts, reported that "to date, there has been no labor organization attempt to organize groups in our company, except that representatives of ALPA have occasionally talked with some of our pilots."

H. R. Bazley, AAA president, said that his company does hold agreements with

its pilots on an individual basis—agreements which are in effect “very similar to agreements other air carriers have with ALPA.”

“The only indication we have had so far that any labor organization plans to organize employees in our Company was a statement appearing in the press a few weeks ago to the effect that there are only four domestic air carriers who had not organized and that CIO was planning to have this accomplished,” Bazley said.

“It is my personal opinion, based on intimate contact with our airline personnel, that they are satisfied with management’s treatment of them and that they would resent any outside interference, or an attempt by CIO to undertake to organize them.”

Following is a list of the leading labor organizations with which the air carriers hold contracts:

Air Line Pilots Association (AFL); Association of Air Navigators (Independent); Flight Communications Officers Association (CTU-AFL); Airline Flight Engineers Association (Ind.); United Transport Service Employees of America (CIO), covering porters; Airline Dispatchers Association (AFL); Airline Employees Association (UAW-CIO), covering maintenance workers; International Association of Machinists (AFL), covering building guards; Airline Mechanics Association (UAW-CIO); Radio Officers Union of the Commercial Telegraphers Union (AFL); International Brotherhood of Electrical Workers (AFL), covering radio technicians; Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, covering clerical workers; Air Line Communications Employees Association (Ind.).

Carriers Cut Express Rates Effective Jan. 1

In a move to increase the shipment of cargo by air, the 18 domestic carriers have authorized a reduction of 13 per cent in express rates to become effective January 1 over the approximately 67,000 miles of routes.

The CAB was advised of the intention of the commercial air carriers to file a supplement to the nation-wide Air Express Division Tariff No. 8 (CAB No. 22) by December 1, to establish the reduced rates between all points.

Initially proposed last July and subsequently approved over a period of months by all of the domestic airlines, the new reduced rates will be applicable to the more than 750 points for which air express rates are published.

The lower air express rates will decrease the present basic charge of 70 cents to 61 2/5 cents per ton mile, and will lower the coast-to-coast rate from 84 cents to 73 cents per pound. The minimum charge of \$1 per shipment will remain in effect.

The haulage factor will be reduced from 3 1/2 cents to a fraction over 3 cents per pound per 100 miles. As an example, the New York-Chicago rate (covering a distance of 711 statute miles) will be cut from 24 1/2 cents per pound to 21 3/10 cents, a drop of 3 1/5 cents per pound.

Aviation Clinic on Record for Single Defense Department

Resolutions Ask Expansion Of Air Transport System

By ERIC BRAMLEY

ADoption of resolutions affecting all segments of the aviation industry—military, manufacturing, airlines, non-scheduled carriers, personal plane makers and owners, and government—wound up the National Aviation Clinic, held in Oklahoma City, Nov. 19-21.

This year’s clinic, the most successful to date, was marked by (1) the high calibre of the speeches presented, and (2) the attendance. Over 800 people, the great majority of whom were from places other than Oklahoma City, attended the meetings in the State Capitol.

Three of the most important resolutions adopted were those asking (1) for immediate establishment of a Secretary of Defense, with Under-Secretaries for the Army, Navy and Air Power, (2) Congress to approve expansion of the air transportation system to include not only large cities but, through feeder lines, small communities, and CAB to hurry feeder line proceedings, and (3) no economic regulation of non-scheduled air carriers until experience and study proves the need for such regulation.

Due to a misunderstanding, some lively discussion took place over the latter resolution. As originally presented by J. R. Harrington, fixed base operator from Mansfield, O., the resolution asked that economic regulation be postponed from three to five years. This was opposed by O. M. Mosier, vice president of American Airlines, and T. E. Braniff, president of

Braniff Airways, as being too specific. State officials and fixed base operators joined in the argument but it became evident that the airlines were not opposing the entire resolution and only had objection to time limit. A committee reconciled the differences.

In all, 17 resolutions passed. They favored immediate elimination of control of civil aviation activities by the Inter-departmental Air Traffic Control Board; urged Congress to provide a permanent program of civilian pilot training; asked earliest possible release and disposal of surplus military airports; asked Congress, in pending airport aid bills, to reimburse cities and states for airport work done, subsequent to passage of the act; supported a program of uniform air marking; opposed federal control of contracts and leases on municipally-owned airports; stated that federal agencies should pay reasonable charges for airport space; promised support to CAA to get funds for continued operation of certain airport control towers; urged adequate research; recommended that NAA coordinate aviation educational activities through establishment of a committee of aviation and education interests; asked legislatures to facilitate joint ownership of airports by communities of different states, with certain tax exemptions, and went on record as favoring equal opportunity for personal plane pilots to use municipal airports when on business or cross-country trips.

Research Needed

In the clinic’s first session, which had as its theme “The Aviation Industry,” John F. Victory, executive secretary of the National Advisory Committee for Aeronautics, asserted that “there is nothing more vital to our national security . . . than relentless prosecution of scientific research in aeronautics to keep America first in the air.” In a well-received speech, he pointed out that at sonic and supersonic speeds we are dealing with entirely new problems in aerodynamics. He warned that “we stand on the threshold of supersonic flight with respect to technical knowledge just about where the Wright Brothers stood when they left Kitty Hawk in 1903.”

Old methods of aircraft propulsion “are fast becoming obsolete,” Victory said. “Much research is required to eliminate operational difficulties and structural weaknesses and to provide the maximum in power per unit size, per unit weight and per pound of fuel consumed. Because security aircraft of the future will depend on such engines, leadership in their development is important.”

Albert W. Mooney, vice president and chief designer of Culver Aircraft Co., said that hitherto limited output of personal plane makers can be expected to increase “because of enlightened and less restrictive regulations, greatly improved production facilities, the now apparent market and the long overdue curb on misleading advertising.” The most important lesson from the war, he said, “lies perhaps in the fact that it has been amply demonstrated that there is no such thing as an all-purpose aircraft. Special-



IATA DIRECTOR—Sir William Percival Hildred has been named director general of the International Air Transport Association. He is present director general of civil aviation for Great Britain. He will take over his duties with IATA April 1, 1946.

ized designs of all types of aircraft did specialized jobs and did them exceedingly well, when once momentum and experience were gained. This lesson has had its effect in the thinking of those people who write, or advise on writing, airworthiness regulations."

Robert Wood, editor of *Aviation News*, stated that the federal Budget Bureau has hamstrung many aviation activities by refusing to approve appropriation requests. The aviation industry, he added, should try to overcome this through its representatives in Congress.

Lt. Gen. Ira Eaker, deputy commander, Army Air Forces, told a luncheon meeting that a national research foundation should be established which would be charged with the responsibility of furthering basic research and development in all fields of science. Gen. Eaker departed from his prepared speech to advocate a "professional" State Department, equipped to handle the important international problems facing the U. S.

At the meeting on air transportation, Joseph Garside, manager of E. W. Wiggins Airways, emphasized that charter operators must develop dependable service, on a nationwide scale, at reasonable rates. "If this is done, merchandising of the service will become comparatively easy," he said. Opposing economic regulation of non-scheduled carriers, he

of non-scheduled carriers and would become convinced that every incorporated town in the U. S.—some 16,000—should have an airfield.

John Paul Jones, Des Moines attorney and private flyer, called upon fixed base operators to clean up their facilities and offer better service to flyers. He said he has found "an amazing lack of appreciation of sound business principles and the requirements of ordinary business courtesy in the characteristic flight operation of today."

William D. Strohmeir, of Charles H. Gale Associates, told the session that "today, for all our aviation progress, it takes too much time, too much money and too much trouble to learn to fly." Better adherence to schedules by airport managers, earlier opening and later closing to increase the time available for flying were suggested by Strohmeir as pointing to some solution. Operators, he said, were gloomy about costs, largely as a result of fixed maintenance costs which have been kept at a high level by use of war-weary equipment. Some relief from this condition is expected by manufacturing developments. Plane ownership by students, he said, might be the best answer both to the time and cost problems.

Wolfgang Langewiesche, consultant to AIA's personal aircraft council, asserted that the Civil Air Regulations "are still the greatest single hindrance to the growth of private flying next to the law of gravity itself." He added, however, that recent revisions gave him new hope. The CAA, he said, should concentrate on supervision and inspection. "I see in (the new regulations) a first small sign that the CAA may again open the field of private judgment, private experimentation and inventiveness, and thereby free our art and our industry from a bad situation which has developed during the last 12 years."

Col. George Price, chief of AAF's Office of Flying Safety, told the meeting on air defense that civil aviation, entering a period of expansion, faces the same tremendous struggle as faced the Army in the matter of safety. Unless the industry meets and solves this problem it cannot achieve rapidly the expansion of which it is inherently capable, he warned.

Col. Price revealed that during the war 22,000 Army planes were completely destroyed in non-combat accidents and that 26,000 lives were lost. The Army will make available to industry the accident statistical and prevention information gained during the war, he said. He warned that safe aircraft, capable pilots and adequate facilities and services "are the three roads which must be traveled to arrive at the objective of safe flying." Price recommended establishment of a central clearing house sponsored by private aviation industry to conduct research and disseminate accident information.

Morton Wilner, former deputy director of Aircraft Production Board's aircraft division, said there must be a current military procurement program adequate to preserve the nucleus of design, production, and management skills. Today's decisions . . . will decide our military strength and national security in the 1950's, he warned. "The 79th Congress will decide whether the 89th Congress will be safe from destruction on Capitol Hill."

Frye Scores Optimism Over Low Fares, Sees Safety As First Need

ASSERTING that air transportation "is not now a mass transportation business" and cannot "hope to become one until it can offer a maximum of safety and dependability," Jack Frye, president of TWA, told the National Aviation Clinic in Oklahoma City that the industry should avoid "confusing the public with promises of equipment, schedules and rates which are not feasible within the reasonably near future."

There is too much optimism, both in and out of aviation, on low rates for passengers and cargoes, he added.

Although he did not mention names, Frye was obviously disagreeing with the recent article by C. R. Smith, chairman of the board of American Airlines, on a "three-cent airline." Some observers also interpreted his remarks as disagreeing with Juan Trippe of Pan American Airways, who recently announced a \$275 trans-Atlantic fare.

The airline's first need, Frye said, is to drive toward the goal of greater safety. "We cannot afford to rest content until air travel is safer than any other form of transportation," he said, adding that "I believe it will take us 15 years or more of intensive effort to reach this goal of safety."

Air travel must also be made more dependable and this goal will also take many years to reach, and may involve additional costs, he said.

Cannot Cut Standards
"I am convinced that we cannot now, if ever, lower our standards of service. Quality service built our business and is necessary to maintain customer loyalty. Air transportation is not now a mass transportation business. It cannot hope to become one until it can offer a maximum of safety and dependability. Until that time comes, it is my opinion that the airlines must hold to the highest possible standards of service in order to maintain the maximum amount of profitable traffic."

Frye departed from the prepared text of his speech on two occasions. "Another thing I think we are slipping on badly," he remarked, "are facilities at terminals." Some terminals, he added, are no better than "second-rate bus stations."

He also criticized aircraft manufacturers for putting out publicity which "cannot be lived up to." Some manufacturers, he explained, have advertised new planes with operating costs and performance which they will never meet.

The airlines, Frye said, should agree on basic policies for a broad public relations program. "For one thing, we should avoid confusing the public with promises of equipment, schedules and rates which are not feasible within the reasonably near future. All of you recall promises and forecasts appearing in newspapers, magazines and on the radio which are not rooted in sound planning or engineering. If these forecasts continue, the public cannot be blamed if it expects the impossible from us and then blames us for not making good."

Again touching on rates, he reiterated that safety, dependability and service, in his opinion, come first, and until the cost

Clinic Dates Set

The National Aviation Clinic of 1946 will be held in Oklahoma City Oct. 14-17.

stated: "If the federal government is going to concern itself with the economics of charter and other non-scheduled aviation, then it must, to be consistent, assume some responsibility for developing the service into a sound air transportation system. This was done for the scheduled division of the business, with notable success and with all credit to the government."

Commending the states for the excellent and promising steps they have taken to map out their areas for state aviation laws and municipal ordinances, Harry Meixell, of Air Transport Association, said it was highly essential for Congress to follow the same course with respect to those areas where sole and exclusive jurisdiction over aviation should be placed in the hands of the federal government.

Speaking at the private flying session, Arthur Boreman, editor of *Dry Goods Journal* and chairman of the Non-Scheduled Flying Advisory Committee to CAA, recommended formation by NAA of a committee covering an entire cross-section of aviation and allied interests. Purpose would be to explore methods of implementing national airport legislation, study revisions to the Civil Aeronautics Act, and to develop plans to promote rapid development of airfields, airmarking, feederlines and non-scheduled aviation generally.

Boreman remarked that Wayne W. Parrish, editor and publisher of *AMERICAN AVIATION*, had suggested some time ago that CAA Administrator T. P. Wright spend a little time out in the "grass roots." He strongly endorsed "grass roots" trips for CAA and CAB officials, adding that after such trips they would reject proposals for economic regulation

of these factors is known, there is not a sound basis for fixing rates. Speaking of cargo, he noted that some airlines think it is a good idea to get air cargo at low rates to top off normal passenger loads. "Any rate that cannot profitably support all-cargo airplanes would be a great mistake," he said. And of rates in general he said: "Rates should be reduced only when we know they will not ultimately have to be raised."

On new business, Frye remarked: "Some have suggested that the airlines must capture a large bloc of railroad coach travel. In my opinion this is not practicable in the foreseeable future. . . . A fertile field for expansion lies in the carriage of new classes of mail."

A substantial share of our potential transportation market is outside the United States, and American aviation must play a leading role in encouraging foreign trade, he said.

U. S. Asks Britain To Return Eleven C-54s Lend-Leased

It has been learned authoritatively by AMERICAN AVIATION that the United States, through the State Department, has requested of England the return of the 11 C-54 type Douglas DC-4 aircraft which Great Britain received under Lend-Lease operations.

One of the planes, used by former Prime Minister Winston Churchill, already has been returned and is now at the Washington National Airport. This plane has luxurious appointments and special interior design. A high British official said that because the plane had flown approximately 800 hours and its engines were soon due for a major overhaul, the British felt no reluctance about giving it up. It was estimated that around \$100,000 would have to be spent on the overhaul and repairs.

This plane, under Lend-Lease authority, was theoretically given to Churchill as a gift from the late President Roosevelt. Had President Roosevelt remained alive and had Churchill remained in office, it is doubtful if the plane would have been returned although recent criticism in the House of Commons of Prime Minister Atlee's trip to America in an American, rather than a British plane, might have forced Churchill to give it up.

Return of the other 10 C-54s is understood to be a part of the liquidation program for Lend-Lease which is now under the State Department. This is the first time that Lend-Lease or any other government officials would confirm the number of C-54 aircraft that had been turned over to Britain for military transportation in connection with the prosecution of the war.

U. S. Equipment Available

Civilian-type aircraft and equipment will be made available to Argentine purchasers by the U. S., according to a statement from the State Department. Termed a result of the "progressive termination of wartime restrictions" and "totally unrelated to any political considerations," the action calls for exclusively civilian use of the planes and parts. This includes the development of private and commercial aviation.

Jurisdiction Over Aviation In Germany Found Complex

U. S. Losing Vital Time Implementing Its Policy

By WAYNE W. PARRISH

BERLIN—Six months after the defeat of Germany, what is the aviation situation in the defeated country? What is the U. S. goal in aviation? How is aviation being controlled and regulated? What has the U. S. to gain out of controlling aviation in Germany?

These and many other questions are in the mind of the inquiring reporter who flies from Paris into Germany where every city is badly smashed from bombing. It doesn't take long in Germany to get some of the answers. Some other answers are slow in forthcoming. A few policies and a few bits of information are crystal clear—others are more confusing than the worst governmental muddle ever known in Washington. Some answers are encouraging, others are extremely discouraging.

Broadly speaking, the U. S. has two aviation objectives in Germany. One is to destroy any remnants of German military and civil aviation and to make certain that it doesn't rise again. The other is the development of airports, air services, air navigation facilities, etc., for our own military and civil purposes.

Along with these two objectives it must be recognized that many of our problems must be worked out in conjunction with the British, Russians and the French.

Other problems are our own, pertaining to that part of Germany which we occupy.

It is not simple to outline the jurisdiction over aviation in Germany. It is irritatingly complex. Instead of a single streamlined organization or command, the U. S. has set up a complicated series of commands and the best description of them is that they comprise a mess. No taxpayer would be happy at seeing it. Too many generals, too many petty politics, too much rivalry for power, too much incompetence, too many smug combat personnel, all too few technical experts, and a godawful amount of boondoggling.

At the same time that we are making good progress in working out aviation policies with the other governments, especially the Russians, we are losing vital time in implementing the policy with brains and material.

The top U. S. aviation officer in Germany is Lt. Gen. John K. Cannon, commanding USAFE (U. S. Air Forces in Europe).

Then there is the Ninth Air Force, of which Maj. Gen. William E. Kepner is the commanding general, which is, in reality, the occupational air force although not called that.

There is also the Ninth Air Force Air Service Command, and the European Air Transport Service (EATS) which furnishes air transport for the European Theater of Operations.

Then there is the Air Transport Command, European Division, of which Maj.

EATS Operation Makes Farce of ATC's High Standards

PARIS—European Air Transport Service (EATS), the occupational military air transport service operated from Weisbaden, Germany, presents one of the Army's most serious problems.

EATS record of 70 passengers and crew members killed during the first 10 days of November is bearing out earlier predictions of the deterioration of U. S. air power in Europe.

The most obvious cause of trouble is that combat personnel and youngsters without air transport experience are attempting to operate an airline. The result makes a farce of the previous high operating standards set in Europe by ATC.

High authorities have expressed belief that EATS should be closed down before conditions become worse and until skilled personnel can assume the air transport role in Europe.

Few of the EATS pilots know how to use radio aids and claim the aids are unreliable. As a result they are flying contact and run into trouble when ceilings are low as they frequently are in Europe this winter. Little attention is paid to manifests, center of gravity in loading, etc.

In few instances does EATS even have the names of passengers. In one of the fatal accidents there is no record of passengers' names. Loading is often performed by a sergeant standing at the plane entrance counting off and when the number reaches 21, the remaining men in line are sent back to await the next plane. Loading is similar to loading a truck. One official observed no fewer than 8 men crowded in the cockpit of a C-47 during take-off. In another plane, the C-47 got out of control, went into a tight spiral, and a rated lieutenant who was a passenger rushed into the cockpit, pulled the pilot out of the seat, and brought the plane out of the spiral. The two young pilots, befuddled, had "frozen" and didn't know what to do.

Those who know about EATS refuse to fly with it, yet there is practically no other means of moving about the European Theater.

Top air officials in ETO are in the process of persuading other nations to adopt our air navigation aids and procedures, while the only U. S. air transport unit in Europe is unable to use these aids because of inexperienced and untrained pilots.

Gen. Robert Webster is commanding officer.

And last, but far from being least, is the armed forces division (formerly air division) of the U. S. Group Control Council which is a policy-making organization in Berlin working with the other three powers. Major Gen. Robert W. Harper is the director of this division, of which aviation is the most important single function.

Gen. Harper's division, working with the other countries, is setting the air policies. USAFE is the unit for carrying out the policies. It sounds simple, but is actually too complex at the moment, and it is unfortunate that there is so much personality and other friction and too much colliding of combat concepts with civil aviation requirements.

Some weeks ago General Harper officially outlined the work of his policy division and since policy is so important, it is enlightening to recall these remarks of his:

"The division . . . is primarily a policy developing organization. We aim to set ideal policies for all aviation activities within the American Zone of Germany. Then we try to negotiate agreements with the other three members of the quadripartite and fix through these agreements the most desirable and uniform policies for the whole of Germany, as far as air is concerned.

Policy Forming Group

"We act under directives and policy guidance from the Combined Chiefs of Staff, the War Department and Headquarters, U. S. Army Air Forces. We expect to have the assistance of many American technical experts in all branches of aviation as the need for their advice and guidance arises.

" . . . We are primarily a policy forming group, interested in every aviation policy in Germany. After these vital air policies are established and negotiated with our opposite numbers in the quadripartite and approved by the Allied Control Commission, we rely upon USAFE, the Ninth Air Force, the Ninth Air Force Air Service Command, Air Transport Command, etc., to carry out the actual operations.

"One of the primary functions of the Armed Forces Division is to develop firm and far reaching policies that will prevent the German Air Force from ever again becoming a threat to the peace of the world. This means that clear cut plans covering every possible contingency must be available under which there will be the total dissolution of the German Air Force and associated para-military organizations.

"Another primary function is the development of a program insuring the total abolishment of German civil aviation, which as you know is a definite adjunct to military aviation. In fact, civil and military aviation are Siamese twins.

"Our plans to achieve this end must include definite measure for the permanent disarmament of German Air Force personnel. We must have clearcut methods for the disposition of German air-war stocks, aircraft armament, anti-aircraft equipment and the absolute suppression of all air munitions manufacturing.

"At the same time we must determine policy and establish rules and regulations for civil and military aviation in Germany covering such phases of great interest to American aviation and the American people as air transport routes, landing

New Research Competition

German scientists are now working for the British and the Russians, and America is faced with a "new kind of competition in the aeronautical sciences," John F. Victory, executive secretary of the National Advisory Committee for Aeronautics, told the National Aviation Clinic in Oklahoma City.

"Many German research personnel are working in their own laboratories under conditions perhaps even more conducive to good work than under Hitler," he said. "The German laboratories are under the control of the Allied powers, but most of them are not in American hands. The Germans had very highly-developed research equipment, and in some respects more extensive than America's. Our English and Russian friends had very creditable research equipment of their own before the fall of Germany. America is now faced with a new kind of competition in the aeronautical science with Britain putting German laboratories in Germany, and Russia hiring hundreds of German scientists to work in Russia."

rights, free transit, the use of airfields in various zones and the development of uniform procedures for weather reporting, air communications, navigational aids, aircraft clearances, air traffic control and emergency air rescue facilities."

The actual working procedure is this: Gen. Harper's division initiates action and introduces operating procedures which it believes to be in the best interest of all concerned. These policies, which are considered ideal for the American zone in Germany, are then negotiated with the control groups of the three other nations and in these meetings the differences are harmonized and a uniform policy for the whole of Germany is established.

General Harper's opposite numbers of other nations on the quadripartite Air Directorate are: Air Marshall H. E. P. Wigglesworth, CB, CBE, DSC (British); Major Gen. X. deSevin (French) and Lt. Gen. T. F. Koutsevalov (Soviet). The chairmanship rotates and each has an alternate and there are numerous technical committees which work out details.

The aeronautics branch under General Harper is headed by Col. Howard Moore and Col. Moore's deputy is West Pointer Col. Gibson E. Sisco.

Doing Outstanding Job

Others in the branch include Lt. Col. Hubert S. Judy, Jr., chief, route traffic and analysis; Lt. Col. Albert S. Raudabaugh, ass't chief, route traffic and analysis; Col. Don McNeal, chief, meteorological section; Col. George H. Sparhawk, chief, air communications section; Major Wilfred E. MacDill, airfields and airways officer; Major Thomas F. McGinty, air communications section; Lt. Col. Frank J. Siebenaler, chief, air traffic control; Major Donald F. Sattler, assistant chief, meteorological section; Capt. Horst Loewenthal, chief pilot, and Lt. William Close, pilot.

Biggest break for Gen. Harper has been the arrival in Berlin as his adviser, of Fred Grieme, experienced and expert CAA official, who knows airport and airway problems intimately.

On paper, U. S. aviation control and planning in Germany looks good. But the actual situation is not.

General Harper is highly regarded and is doing, in this writer's opinion, an outstanding job. His work with the Russians cannot be underestimated—here is the key to vital future relationships. Harper's staff is okay, too. They have little to work with but they are conscientious (in contrast to most of what one sees in Germany) and they are sincerely trying to do a job for the national interest.

This writer cannot speak with first-hand authority about General Cannon's setup,

but second-hand opinions are not too favorable. There is too much conflict, too much inexpert direction. As for the Air Transport Command, which has had a high and thoroughly professional record, it is okay except that it has declined in size and strength and is no longer the big factor it once was. ATC is trimming its schedules and preparing to turn over its primary jobs to commercial carriers. As for EATS, this writer has already expressed the opinion that this outfit should be closed up for the winter. It is a menace and has marred the high U. S. air transport safety record because of inexperienced personnel.

Top Planning Good

My impression of the top planning is that it has been good. By this time there should be no difficulty for anyone in Washington being able to write a clear, concise directive. The trouble is in carrying out the directive and it seems clear that Washington has little appreciation, or an understanding, of the problems that exist in Germany as pertain to aviation.

General Cannon's USAFE is at Weisbaden. So is the Service Command, Ninth Air Force and EATS. ATC is in Paris. General Harper's headquarters are in Berlin. There is an evident lack of coordination among all of the aviation outfits, a lack of knowledge by one of what the other is doing, a "Nuts to you, Joe, go swim for yourself" attitude in some quarters, a distinct lack of unification of effort—and above all a lot of incompetence and misdirection. But also there are quite a few officers who are experienced in their respective lines who are trying to do a job despite the handicaps.

One of our big concerns in Germany is airway traffic control. Progress is very slow, and it is questionable whether at this time that the U. S. will be able to achieve the objective that has been set—which is to establish airways in the ETO up to U. S. standards.

Even for simple requirements in the American zone, the units can't get wire, cable and other material for which they cable home frantically. Stupid clerks at Wright Field and other places either ignore the messages or cable back that none is available—when there are billions of dollars in equipment all around the world available for the asking.

If we want the rest of Europe to follow the U. S. standard of airways, air navigation aids and airway traffic control, then good equipment must be installed to replace the temporary equipment rushed into use during the war. And proper personnel must direct the installations.

U. S. Schedules to Britain Point to Need for Talks

No Formal Agreements Cover AA, Pan Am Flights

U. S. commercial air services across the North Atlantic to Britain were the subject of many behind-the-scenes discussions in Washington last fortnight—discussions which emphasized the need for early talk with the British on a permanent bilateral aviation agreement.

Officials of both governments were looking for some way to deal with schedules being flown during the so-called "interim" period, i.e., the period dating from the time U. S. carriers commenced service to Britain several weeks ago to the date of signing of a permanent agreement with the British.

The somewhat unusual background of the trans-Atlantic situation was as follows:

1. Two airlines are now flying—Pan American Airways, operating two trips weekly, and American Overseas, Inc., operating five trips weekly. The British carrier, British Overseas Airways Corp., has two trips a week.

2. Pan Am's operation is covered by a 1937 agreement, giving a U. S. carrier two weekly trips, with the same number going to the British. BOAC also operates under this agreement.

3. American started its route to London on the basis of three trips weekly from New York, and on Nov. 14 stated that, after notifying the British through the State Department, it was adding Chicago-London and Washington-London flights. These started Nov. 19 and Nov. 23, respectively.

4. None of American's five flights was covered by an agreement. They evidently were being operated through an informal understanding with the British.

5. On Nov. 23, Pan American announced that it was filing schedules with the Civil Aeronautics Board to increase its service to five times weekly—"the maximum obtainable under existing government arrangements." No one in Washington was able to interpret this statement. (Meanwhile, Pan Am, hearing no objection from the CAB, instituted its \$275 one-way New York-London fare, which has been the subject of discussion and argument since mid-October).

During the fortnight, the British were pressing for a temporary agreement to put the service on a "legal" basis, and had advanced proposals to that end. It is understood that one proposal involved the granting to U. S. carriers of permission

to operate a certain number of trans-Atlantic seats during a specified period, with the British carrier receiving permission to operate the same number if it desired.

As this issue went to press, officials said that the U. S. had so far found it impossible to accept this proposal. They pointed out that the "capacity" theory was against U. S. principles in international air transport, that such an arrangement would limit schedules that could be operated, and had other drawbacks.

Meetings were still going on, however, and action on some conclusive agreement was expected momentarily.

To the British, two courses of action appeared open—reach some kind of a satisfactory agreement, or, unable to do so, decide by themselves what frequencies U. S. carriers shall operate in the interim period.

Some officials in Washington praised the British for cooperating in allowing U. S. services to get started in the absence of a formal agreement. But all agreed that the "informality" would have been unnecessary had the British met with the U. S. some time ago and concluded a permanent agreement.

Non-Profit Air Foundation Set Up In Cleveland

A non-profit Air Foundation for the purpose of contributing to aviation's advancement through promotion of education, through research, and through scholarships for aeronautical education has been incorporated by civic and business leaders of Cleveland, O. Incorporators are Frederick C. Crawford, president of Thompson Products, Inc. and president of the Foundation; A. J. Weatherhead, Jr., president of the Weatherhead Co.; A. C. Ernst, of Ernst & Ernst, and W. T. Holliday, president of the Standard Oil Co. of Ohio.

First functions of the new Foundation, for which an initial sum of \$250,000 is being sought from individuals and corporations, will be to lend financial assistance to the organizations staging the National Aircraft Show in Cleveland Public Auditorium, Jan. 11 through 20, and the National Air Races to be revived in Cleveland next summer.

Sikorsky Holds Jet Propulsion Will Aid In Helicopter Output

THE use of jet propulsion to provide auxiliary power would make possible the production of helicopters of as large size as required for practical purposes "for this type of aircraft which will always remain a short-range craft," Igor I. Sikorsky, engineering manager, Sikorsky Aircraft Division of United Aircraft Corp., told the National Aviation Clinic in Oklahoma City on Nov. 21.

In discussing the size of helicopters, Sikorsky noted that craft with several lifting rotors have been proposed. He expressed his belief that "the single rotor helicopter will perhaps remain the predominant type for many sizes . . .

"Of course for very large sizes it would not be practical to transmit the immense torque through a mechanical transmission and a huge shaft. It would be better to apply the torque close to the tip of the blade by way of auxiliary propellers as has been successfully demonstrated by Curtiss-Bleeker or still better by the use of jets or other appropriate device such as an atodyne or rocket propulsor."

Sikorsky asserted that Sikorsky Aircraft Division has a new four-place helicopter on the production line which will have a useful load of 1,250 lbs., a hovering ceiling of 3,500 ft. with its present engine and substantially more with a supercharged one, a maximum speed of over 100 mph., and cruising speed of better than 80 mph.

He warned, however, that "today and for some time to come, the relative cost of helicopters for individual use will be considerable. Their maintenance is not yet a chore for the neighborhood garage. Until mass production of frozen yearly models becomes the rule, such savings cannot be passed along to the consumer. Until that day comes, helicopters will not be a Sunday afternoon traffic problem on the airways near our cities. The first automobiles were expensive. Only a few could benefit by their use. Slowly continued engineering study and experience combined to make the flivver a part of our daily lives. So also must the helicopter slowly earn its own place in our economy. Already it has made more progress in its first five years than did the horseless carriage."

Luxury is Keynote in Over-ocean Travel

Luxury is the keynote of transportation being offered passengers on U. S. flag airlines operating across the North Atlantic.

Pan American Airways has installed 16mm movie projectors on its Clippers and feature current motion picture attractions plus short subjects. Investigations also are underway looking toward the practicability of wiring the Clippers to permit selective commercial radio entertainment.

American Overseas Airlines Flagships are featuring de luxe meals prepared aloft. A typical menu starts off with cocktails—Martini, Manhattan or Dry Sherry—and includes hors d'oeuvres, fresh fruit cocktail, bouillon, celery, olives, fileted mignon, tossed green salad, and pie a la mode.

American's Thanksgiving menu, incidentally, was comprised of an old fashioned full course turkey dinner with all of the trimmings from cranberry sauce to stewed onions, topped off with pumpkin or mince pie.

Ramspeck Named ATA Executive Vice President

Rep. Robert Ramspeck of Georgia, for the past two years Democratic whip of the House, was named executive vice president of the Air Transport Association, effective Jan. 1.

The action was taken at an ATA directors' meeting in Washington, Nov. 26. Stuart Tipton, who has been acting president of ATA will return to his post as general counsel. The directors said the position of ATA president will remain open for the time being.

U. S. International Lines May Use Bovingdon Field

Airport 25 Miles From London Remains Military

OFFICERS in the War Department said last fortnight that the Army was willing to allow four-engined transports of U. S. international airlines to use Bovingdon airfield, 25 miles north of London, provided that the Army can retain control of the field for essential military operations.

Commercial flights now operate into Hurn, 118 miles from London. A three-hour train ride is necessary to reach London from the airfield.

Comments by Army officers were prompted by a statement released through the British Embassy in Washington. The British, the statement said, had been accused of blocking entry of U. S. airlines to Bovingdon. However, it added, the field, built mostly with British funds, had been in U. S. hands since 1943. All that was necessary was for the Army to turn the field back to the Air Ministry, and the British would make it available for commercial use.

U. S. officers, on the other hand, said that it was not quite that simple. Bovingdon, they explained, is the only airfield within about 100 miles of London that remains under U. S. control for transport flights. If the field were returned to the Air Ministry our Air Forces would lose control, which is needed for these essential military transport operations.

No Army Objections

However, the Army has no objection to U. S. four-engined transports using the field under a set-up in which the Army retained control, they said. Asked if this also applied to airlines of other nations, one high-ranking officer said that as far as he knew such a proposition had never been advanced and that therefore he could not express an opinion on it.

State Department sources expressed the belief that the Bovingdon situation will be worked out satisfactorily.

Officials of the Civil Aeronautics Administration said that their inspectors had okayed Bovingdon for commercial operations, provided that certain limitations were placed on take-off weight.

Text of the British statement follows:

"Various statements have appeared in the American Press about Bovingdon Airfield near St. Albans, about 25 miles North of London. The allegation has been made that the British were deliberately preventing United States airlines from landing at Bovingdon and forcing them to operate their services to Hurn, which is 118 miles from London. Further, it has been alleged that Bovingdon was built with American money and hence should be open to American operations.

"The facts are as follows:

(1) Bovingdon airfield was built by the British Air Ministry in 1941 for Royal Air Force Bomber Command.

(2) In April 1943, the airfield was placed freely at the disposal of the United States Army Air Forces.

(3) Since that date expenditure on permanent and semi-permanent construction has been found largely by the British taxpayers.

(4) Expenditure figures are as follows:

(a) Cost of original construction—£900,000 (\$3,600,000) found by the British taxpayers.

(b) Cost of maintenance and improvements since transfer of the airfield to the U. S. Army Air Forces—£202,036 (\$808,384) of which £142,096 (\$568,384) paid by British; £60,000 (\$240,000) paid by U.S.A.A.F.

(c) Thus total expenditure—£1,102,096 (\$4,408,384) of which £1,042,096 (\$4,168,384) paid by British, £60,000 (\$240,000) paid by U.S.A.A.F.

"Bovingdon airfield is at present owned by the Royal Air Force who have placed it entirely at the disposal of the U. S. Army Air Forces who occupy and operate the field. It is used for military purposes.

"In October 1945, the U. S. Embassy in London asked the British Ministry of Civil Aviation to allow American civil airlines to operate into Bovingdon.

"On 25th October therefore, at the request of the Ministry of Civil Aviation, the Royal Air Force wrote to the Commanding General at the H.Q. U. S. Forces, European Theatre, asking that the airfield be handed back to the British Air Ministry, who would then place it at the disposal of the Ministry of Civil Aviation in order to provide Civil Aviation facilities near London for the needs of other countries.

"No reply has been received so far.

"Thus the airfield has been and still is in the hands of the Americans. We are therefore uncertain of what facilities exist for handling commercial passengers. We have installed none ourselves."

Weather Delays Slow Travel On Continent

PARIS—Since my arrival on the Continent Oct. 3, about one week out of two has been devoted to sweating out weather delays. Anybody who has been trying to fly around Europe this winter has had plenty of hold-ups.

Causes of weather delays are various. One is the lack of air navigation aids at various points which would permit landings and take-offs with much lower ceilings than are permitted by contact. Another is that Air Transport Command is stressing safety above everything else—and is taking no chances. Another is the general unfamiliarity with European weather, and lastly, but not least, is a type of weather over here which would plague commercial operators in the U. S.

Several weeks ago I departed from Paris with Lt. Col. Bill Arthur, ATC operations chief, and Major Russell Gohring, public relations officer, for a flight to Berlin to require about five days. We left Orly Airport at Paris at noon on a Tuesday. We finally arrived in Berlin late Saturday afternoon, and it's only a three hour flight.

Here is what happened: we flew direct to Berlin and found that the airport had been closed twenty minutes before we arrived. We could have landed okay, but the inexperienced and arbitrary management of Tempelhof is the disgrace of the ETO. After circling the field for an hour and twenty minutes, in full view of the field at all times, we returned 250 miles to Hanau Airport, just east of Frankfurt, operated by ATC. Hanau was one of the most poorly operated airports from standpoint of discipline I have



TWA Award—Jack Fry, TWA president, left, presents award to Edward Maher, editor of Liberty Magazine, who received it for Wayne Parrish, winner of 1st prize in magazine division of TWA's 1944 aviation writer's contest.

ever seen, due almost entirely to the disgruntled C.O. who had fancy and not very smart ideas of how to keep his men busy.

The second day we remained at the airport all day but Berlin failed to open up—the weather got worse. So we spent the night in Frankfurt. Third day we took off at noon when Berlin reported that it expected Tempelhof to open up. We arrived over Berlin to find a low ceiling and returned westward to learn that Hanau would be closed in next day. So we proceeded to Copenhagen, Denmark. Both Copenhagen and Berlin were closed the day following, so finally at Saturday noon, we took off for Berlin, arriving there late in the afternoon.

Getting out of Berlin was also a problem. Air Transport Command didn't have a plane into Berlin for a week. I finally returned on a special ship set up by Major General Robert W. Harper; otherwise I'd probably still be there. Three days of the second week were lost because of weather, making a total of a week lost out of two weeks time.

Going to Switzerland has likewise been a problem. Scheduled to depart from Paris on Monday, the Monday flight was cancelled. Same on Tuesday. Same Wednesday. Same Thursday. Same on Friday. On Friday night I departed by train.

"If you have time to spare, travel by air."

The flight to Stockholm went off okay, but there was a two-day delay in returning because of weather.

There are plenty of instances of men waiting weeks to travel by air to their destinations. "Take the train," you say. But trains are not in abundance. Train travel to many parts of Europe is impossible. There are two trains a week between Frankfurt and Berlin. French train travel has resumed to many places but sleeping accommodations need to be booked weeks in advance.

ODT Orders Nine Carriers to Allot Space to Servicemen

70% of Eastbound Seats To Go To Pacific Troops

NINE air carriers were ordered by the Office of Defense Transportation to allocate 70% of their eastbound space to military personnel returning from the Pacific, effective Dec. 3. Westbound schedules are not affected by the order.

ODT said the action was necessary in view of heavy arrivals of returning servicemen at West Coast ports, tentatively estimated to reach 500,000 a month by the end of the year.

Under the ODT order, the five carriers serving the West Coast will operate 53 schedules a day under which an average of 665 military personnel will be carried to Boston, New York, Baltimore, Washington, Norfolk and Jacksonville, Fla. West Coast originating points are San Diego, Los Angeles, San Francisco and Seattle.

American and Western Air Lines will serve as the originating carriers at San Diego, operating eight schedules per day. Connections will be made by Western with United at Salt Lake City and by American with PCA at Chicago.

Out of Los Angeles, American and TWA will operate 23 trips per day to carry 298 military passengers. Connections will be made with PCA, and Northeast. The latter carriers have been designated to handle traffic to Norfolk and Boston.

Cuts Civilian Space

From Seattle, United and Northwest will operate 11 trips carrying 132 passengers a day, with connections to PCA, Northeast, Eastern and Delta. The latter two carriers will handle traffic into Jacksonville.

United is the originating carrier in San Francisco with 11 schedules carrying 132 military passengers a day.

Immediate reaction to the order from West Coast airline traffic representatives was that all space for eastbound civilian travel may be practically eliminated between Dec. 10 until after Christmas. These sources said space remaining after military personnel are boarded will be taken up with heavy Christmas mail and express shipments.

The order was the first issued by ODT affecting air traffic. Servicemen transported in accordance with the order will be in addition to those carried under the "Trans-Con" project by which commercial aircraft are hauling a number of troops for the Army on a contract basis.

Allocation of seats for military men will be in the hands of military authorities, ODT said. It was estimated by ATA that the carriers would haul 23,000 troops eastbound each month.

It was understood that the bottleneck in transporting Pacific servicemen back to the U. S. extended as far as Okinawa, but that the West Coast represented the greatest problem. The increase in traffic, ODT said, is placing a greater burden on West-East rail lines, and in view of the scarcity of sleeping cars, the airlines agreed to take over a share of the traffic.

Study of Air Policy Is Immediate Need Says Lockheed Official

ASSERTING that America has no airpower policy for peace, Carl B. Squier, vice president of Lockheed Aircraft Corp., has urged that the President or Congress appoint immediately a committee of "outstanding, competent, unprejudiced, public-spirited citizens who would promptly undertake a comprehensive study of all phases of this problem and make recommendations for establishment" of such a policy.

Squier told the National Aviation Clinic in Oklahoma City that six years after World War I President Coolidge appointed a similar board under chairmanship of Dwight Morrow. "Although their report was comprehensive and almost prophetic in its content, when it was submitted in 1925, it fell on the ears of a public that had already forgotten the tragic lessons of war. The report came too late ever to be fully implemented," he said.

The time to determine our future air policy, he emphasized, "is now, when the lessons of war are fresh in our minds."

The three principal segments of American aviation, he pointed out, are manufacturing, military air forces and air commerce. "To begin with, aircraft manufacturing is an absolute prerequisite to the development and functioning of the other two elements; it is the creative force from which military and commercial aviation emerge. It is, therefore, basic that in any national air policy, provision must be made for maintaining a strong, virile manufacturing industry, and that we must make sure that demobilization does not become disintegration."

One of the first provisions of peacetime airpower policy must be for an adequate research, development and experimentation program, both in government and in industry, Squier said. He suggested that (1) all properly qualified manufacturers should be invited to submit competitive designs and bids on aircraft desired by the armed forces, (2) that they should be reimbursed for costs incurred in designing and building prototype planes in government-sponsored design competitions, (3) the company producing the winning design should get the prime production order, while other manufacturers could get additional orders under a licensing agreement, (4) the winning manufacturer should get a fixed price production order of sufficient size to provide a delivery rate of one plane per day for a period ample to perfect efficient and economical production methods, and enough units should be built to provide for an adequate pilot training program,

and (5) the procuring agency should buy a full set of production tools.

The personal plane, he said, "offers the greatest potential for a vast mass production business." Manufacturers, he added, must design and build planes capable of landing and taking off in small areas, with flying characteristics that will enable any normal adult to fly it after one hour's instruction. "It must have a cruising speed of 125 mph, with a range approximating 500 miles, an operating cost of not to exceed five cents per mile, and a selling price within the general price range of automobiles. This may not be possible tomorrow or next year, but I am convinced it will come—and sooner than many people may think."

Commercial aviation, he said, needs simplified economic regulation and more expeditious handling of regulatory proceedings, elimination of multiple taxation, development of adequate regional air services, disposition of complex questions of international cooperation such as those being considered by PICA, development of airports, communication and navigational facilities, and development of an effective civilian pilot training program.

Prices Cut on C-54 In Effort To Boost Sales

While continuing generally existing leasing arrangements now in effect, the Surplus Property Administration on last fortnight announced a 25-40% reduction in the purchase price of surplus C-54 type aircraft, in the hope that outright sale of these aircraft would be encouraged.

Under new prices, the model in largest supply, the C-54B, may be purchased for \$90,000, as against a former purchase price of \$150,000 which included a 50% allowance for the cost of conversion and repairs. The new prices are net prices and contain no conversion allowances. The price schedules follow: C-54 (Basic) and C-54A, \$75,000; C-54B and C-54D, \$90,000; C-54E and subsequent models, \$100,000.

The disposal agencies are authorized to increase or decrease these prices by not more than \$10,000 in order to reflect the condition of individual airplanes.

The existing leasing provisions have been retained intact, with the addition of a slight decrease in the lease price for aircraft which are acquired for contract operations. Under the leasing provision, the C-54B may be leased for \$24,000 per year for a five-year period. The lease may be cancelled at any time after one year, but at that time the airplane, together with all improvements must be returned to the government. The leasing provisions continue the existing terms regarding conversion allowances and do not permit allowances for the substitution of different type engines.

To date 150 C-54 type transports—116 to domestic and 34 to foreign airlines have been allocated under lease provisions. It is hoped by the government that the reduction in the price will stimulate the outright sale of the 103 C-54 types which are expected to be declared surplus by March 1, 1946.

NOW—new high-speed fleet of 56-passenger PCA Capitaliners!

**Giant 4-engined planes slash flying time
—will make "trolley runs" between
cities formerly hours apart!**

With a cruising speed of 4 miles a minute, PCA 4-motor Giant Capitaliners will drastically slash air-travel time between America's key industrial capitals. For instance—Detroit to Cleveland in 29 minutes! Pittsburgh to Washington in 45 minutes! You'll have more time for work or recreation wherever you fly.

In a few weeks the first of these bigger, faster PCA Capitaliners will be in flight over the PCA Skyway. In a few more months we'll have the full fleet of these sky giants in service. They will seat 56 passengers, almost *three times the number of today's transports*. And remember, wherever you go . . . it costs *less* today to fly PCA!



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Detroit to Chicago	\$11.45
New York to Pittsburgh	\$14.90
Pittsburgh to Knoxville	\$17.90
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Westinghouse Unveils Two New Gas Turbines of U. S. Design

X9½A, World's Smallest, Is Developed For Buzz Bomb

THE new aviation gas turbines—the X9½A Baby Jet and the X19B Yankee—were announced last fortnight by Westinghouse Electric Corp. Both are of an "all American design" employing an axial flow compressor with the combustion chamber immediately aft which results in only 75 percent as great a diameter and 50 percent as great a frontal area as previously announced gas turbines of comparable thrust power.

The Baby Jet is described as the world's smallest aviation gas turbine and was developed for the Navy to power a buzzless buzz bomb. It has a maximum diameter of 9½ in. and weighs 145 lbs. The turbine and compressor rotate at 34,000 rpm. Power output is 275 thrust pounds which is roughly equivalent to 275 hp at 375 mph. While the Baby Jet was developed for guided missiles, Westinghouse is now working on the possibility of adapting it as an auxiliary power plant to operate cabin superchargers and other accessories, and may later develop it as a power plant for personal aircraft, although the latter possibility is still a long way off.

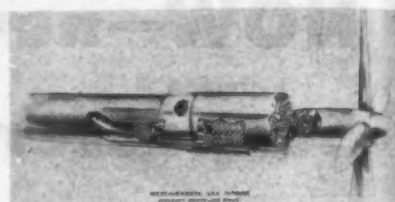
The X19B Yankee is a refinement of Westinghouse's first gas turbine—the X19A—which was completed in March 1943, accepted by the Navy in September of that year, and first flown under a Navy Corsair fighter in early 1944. It is said to be the lightest, smallest and most efficient turbine in comparison to power

output yet revealed in this country if not in the world, although Westinghouse announced that it has still more efficient engines which are still in the restricted category.

The Yankee has a maximum diameter of only 19 in. and an overall weight of only 800 lbs. Power output is 1,375 thrust pounds, or approximately 1,400 hp at 375 mph. The Yankee has a six stage axial flow compressor rotating at 18,000 rpm. Due to the lower rotating speed and other refinements made possible by its larger size, the Yankee has a 15 percent greater fuel economy and efficiency than the Baby Jet.

The Yankee and the Baby Jet are but two of three sizes of gas turbine built experimentally by Westinghouse. The third size is still classified, but is assumed to be larger and more powerful than either of the two disclosed. In addition to engineering three sizes of gas turbine, Westinghouse has designed and tested four different models in these three sizes, and expects to have two of these models in production early next year. The company has three additional models in the design or test stage including a propeller driving turbine.

Coincident with the unveiling of the two engines, George H. Woodard, manager of Westinghouse's Aviation Gas Turbine Division, announced that Westinghouse intended to stay in the aircraft engine business, and that it was just completing a \$10,000,000 plant and research laboratory at Philadelphia that would be opened officially in January 1946.



Cut away drawing of X9½A

He said that Westinghouse was in a particularly fortuitous position as far as its aviation turbine division was concerned, in that it had no reconversion problems. None of its engines were in production when the war ended, and today when other companies are troubled with cutbacks, Westinghouse is just starting a production program and can look to an expanding payroll reaching a peak of 2,000 employees late next year or early in 1947.

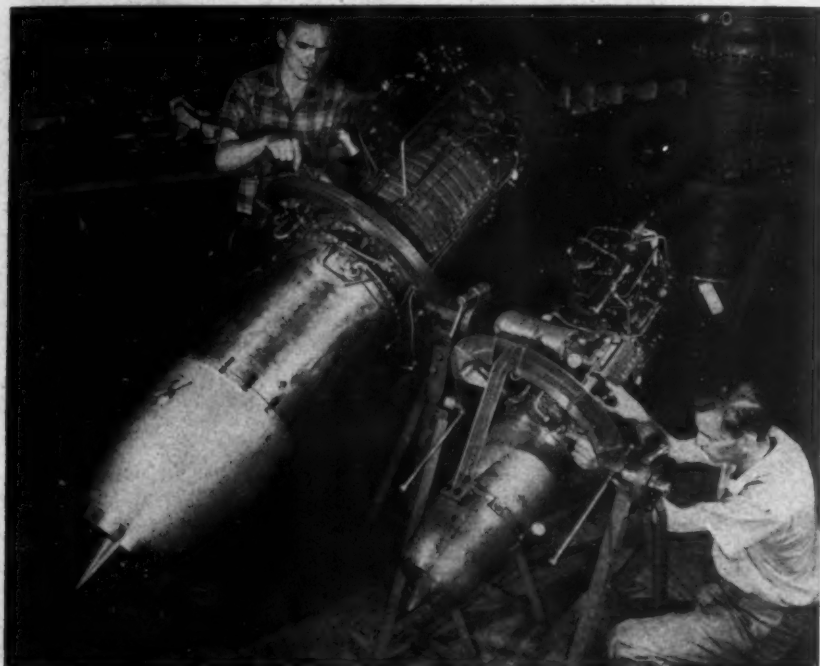
He stated that the company expects an annual volume of aviation gas turbine business in the neighborhood of \$10 to \$15 million, with commercial and civil aviation accounting for 20 percent of the business and the military for the remainder. In general he said he expected the gas turbine to replace the up and down engine at outputs of above 1,500 hp with the reciprocating engine continuing to dominate in the lower horsepower field for some time to come. He divided the gas turbine into two types, the jet propulsion engine and the propeller driving turbine. The former, he said, would be used primarily for high speed military fighters and guided missiles, adding, however, that it might have some application for high speed commuter transports for use on such routes as Boston-New York and New York-Washington where the range was short, and the number of trips which could be made in a day would more than compensate economically for the higher fuel consumption.

The propeller driving turbine, he pointed out, would be used for Navy fighters where carrier take-offs were an important consideration, and for very heavy, long range bombers and transports with speeds up to 500-550 mph. It is this latter class which he believes will account for a majority of the company's future business.

Explaining Westinghouse's description of its engines as of "all American design," Woodard said that the Navy came to the company on the day after Pearl Harbor with the assignment to design and develop an aviation gas turbine, and that because the Navy believed that a better engine could be developed from a completely fresh start, all information on the Whittle and other gas turbines was withheld from Westinghouse. As a result the Westinghouse engineers used their past experience in steam turbine manufacture to attack the problem from an entirely fresh viewpoint.

Forms New Company

Don McNeil, president and chief engineer of Clark-Babbitt Engineering Associates, Newark, N. J., recently left for Caracas, Venezuela, to form a wholly-owned subsidiary, Venezuelan-American Engineering Corp. Purpose of the new company is to act as consulting and contracting architects and engineers. The facilities of Venezuelan-American are available to the Venezuelan government as well as to Venezuelan private industry and American interests in South America.



This photo shows the Westinghouse X19B (left) and X9½A gas turbines

Stars in the sky.... Western Airlines

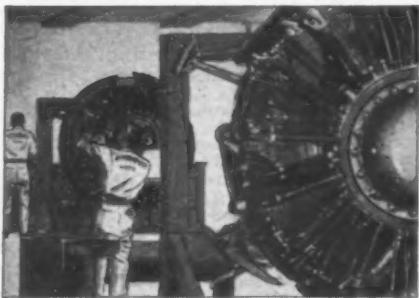
famous transports that fly on Chevron Aviation Gasoline

OVER PIONEER AIR TRAILS, carrying rush cargoes and busy people, Western Air Lines' huge sky ships are aloft night and day. The oldest airline in the nation, Western charted nearly two decades ago some of the routes they fly today. To help maintain a time-tested high standard of service, Western fuels all their planes in the Pacific West with Chevron Aviation Gasoline.



OLD-TIMER TRANSPORT, the first with four engines and sleeping accommodations, was introduced by Western in 1930. It was the forerunner of huge, 44-passenger, four-engined Western airliners now being manufactured. The maximum power output of Chevron Aviation Gasoline operates these air giants economically and with ease.

WESTERN'S AIR TRAILS cover the West. And wherever Western transports fly in the Pacific West, Chevron Aviation Gasoline awaits them. Chevron is available for private flyers, too, along all the skyroads of the West.



1050 HORSEPOWER RADIALS, powering Western's Airliners, are regularly checked and overhauled in special Western-owned shops. Uniform, clean-burning, high-octane Chevron Aviation Gasoline makes engines last longer—cuts repairs.



TRANSPORT PILOTS give Chevron Aviation Gasoline the O. K. sign. Like airline captains, you'll find Chevron Aviation Gasoline brings out the best in aircraft engines. It will make your personal plane, too, a star in the sky.



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Smith Says Railroads Are 'Hamstringing' Air Carriers

American Board Chairman Sees Threat of Monopoly

C. R. SMITH, chairman of the board of American Airlines, told the 25th annual meeting of the American Petroleum Institute in Chicago that the industry was attempting to hamstring air transportation progress with restrictive legislation.

Smith said the railroads were trying to impede the progress and growth of air transportation as they earlier tried to impede the progress of highway transportation.

He said that proposals for integration of all transportation systems on a sectional basis expressed the railroads' philosophy that "they believe that they are fighting the airline operators, when, in truth, they are fighting the public adoption of a more effective form of transportation."

Smith's remarks drew a vigorous denial from John J. Pelley, president of the Association of American Railroads, who said in a wire to the airline official:

"... You are quoted as stating that railroads seek to 'shackle aviation with restrictive legislation.' On the contrary, the railroads believe in aviation and believe further that present restrictions which arbitrarily bar them from opportunity to participate in its greater development and usefulness should be removed."

"The railroads believe also that commercial air transportation should pay its own way, just as railroads do, but this certainly would not be restrictive legislation."

"You are further quoted as saying that an objective of the railroads is to set up sectional monopolies of all forms of transport under railroad control. The railroads have no such objective, sectional or otherwise, and are offering no proposals looking to that end."

Smith said that under the proposed sectional program the country would be divided into sections, with all modes of transportation in each section grouped together into "sectional transportation monopolies."

"They (the railroads) say that this will permit 'through' shipments," Smith said. "It is most obvious that you do not need common control of all forms of transportation to achieve through service; all you require is the willingness to make it effective."

"The second reason that they advocate as a requirement for integration is economic health—unless the rail lines are protected from the competition of more effective forms of transportation, the business will not survive and the government will take over."

"It's queer medicine for our national system of transportation for one of the principal members to say to another: 'It looks like I am going to be sick and that you are going to remain well; let's get in bed together and have equality of health.'"

"The rail lines should recognize," he said, "that air transportation is here to

stay, and they should stop throwing rocks. They are really throwing rocks at transportation progress."

Smith said that the rail lines had "ample opportunity to get in 'on the ground floor' of both automotive and air transportation and in each case they early elected not to participate."

Integration, he said, whether on a sectional or national basis, means transportation monopoly. "The integration program will deceive no one familiar with transportation history."

"The invitation for us to join is known as the 'dangerous embrace' and we want no part of it. So far as national transportation is concerned, it would be well to remember that you do not raise a vigorous and promising family by systematically stifling off the younger members of the group."

Smith said that if railroad history is a true index of railroad strategy, "I presume that our next area of disagreement will be in the states. There will be an attempt to regulate air transportation on a state level, although some states can be crossed by airplane in less than 15 minutes."

"In the long run the answer is obvious—it will not succeed, but it is possible that the time can be deferred when the full public benefit of air transportation is available to the public."

Model State Air Act Is Being Re-Drafted

George W. Burgess, assistant to Assistant Secretary of Commerce William A. M. Burden, disclosed last fortnight that a joint committee made up of representatives of the National Association of State Aviation Officials, the Federal-State Division of the Department of Justice and the Civil Aeronautics Administration is now at work on a re-drafting of the original "model" State Aeronautics Department Act.

Speaking before the Arizona State Aviation Conference at Tucson, Burgess declared that the re-draft would "reflect the further agreement in regard to the old bill which was reached at St. Louis earlier this month at a meeting of the NASAO. Burgess indicated that the biggest hurdle to be cleared by the joint committee consisted of the problem of state registration of pilots."

The State Aeronautics Department Bill, originally drafted to provide uniformity in State aviation legislation, sets up a State commission and Director who are obligated to cooperate with the Federal Government, develop airports and other air navigation facilities and otherwise foster aviation in the State. Under this proposed act, all State rules and regulations are to be kept consistent with, or at least in conformity as nearly as may be with, current Federal aviation legislation and regulations.

This bill, Burgess said, has been largely accepted by both CAA and NASAO officials,

but at NASAO's St. Louis meeting earlier this month it became apparent that this acceptance "had left open the question as to whether or not a state or city could require that a pilot who is a resident of the State must have a State Registration ticket of his Federal Airman and Aircraft Certificate and that such State registration would be requisite to the right to fly in the State." The States desire such registration, Burgess explained for the three purposes of information, revenue, and enforcement. The first purpose, he said, is met by the CAA's information activities; to the second—revenue—CAA has no objections.

"The third reason, then," Burgess stated, "is the only real bone of contention, and the CAA's objection is largely legal, for both the Civil Aeronautics Act of 1938 and the old Air Commerce Act of 1926 grant the freedom of transit in the navigable air space throughout the United States to all its citizens. Consequently we do not feel that a certificate of competency issued by the Federal Government can legally be interfered with by any political subdivision of the country. However, if the holder of a Federal certificate abuses the right to fly throughout the country so as to endanger the life and property of someone on the ground, then we recognize that the States have not only a right under their police power, but an obligation to step in with punishment and preventive action—such as fine, imprisonment and enjoinment."

"The natural question is then brought up by the States that if we recognize that they can punish one who abuses the national right to fly within the geographic area of their authority, why should they not be allowed to ground the man by taking away a State Registration Ticket. The answer to that one is that such action immediately places on that State Registration Certificate a requirement of possession in order to fly within the State, and that, we contend, is contrary to the 1938 Civil Aeronautics Act."

SPA Allocates 56 More Transports to Lines

The allocation of an additional 56 surplus transport planes, including 49 four engine Douglas DC-4 types (C-54s) was announced by the Surplus Property Administration last fortnight. This brought the total of surplus two and four-engined Douglas transports allocated to U. S. and foreign applicants to 398. Of this number, U. S. applicants have received 286 and foreign applicants 112.

The surplus transports allocated Nov. 15, in the 20th allocation, are as follows:

U. S. Applicants

Douglas C-54A—American Airlines 15, North-east Airlines 3.

Douglas C-54B—United Air Lines 5, American Airlines 5, TWA 5, Eastern Air Lines 5, Pan American Airways 5; Delta Air Corp., Western Air Lines, Braniff Airways, Chicago & Southern Air Lines, National Air Lines, Continental Air Lines, one each.

DC-3—United Air Lines and Eastern Air Lines, one each.

Foreign Applicants

DC-3 (C-53)—A. B. Aerotransport, Swedish Air Lines; Det Danske Luftfartsselskab (Denmark), Royal Norwegian Air Transport, Divisao de Exploracao dos Transportes Aereos (Portuguese East Africa), Divisao de Exploracao dos Transportes Aereos de Angola, one each.

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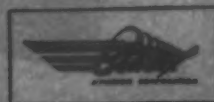
Congratulations to T. W. A. in selecting Pioneer*
Automatic Pilots, flight and engine instruments
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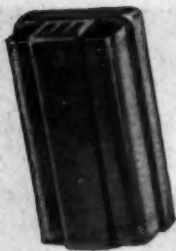
Another indication of Pioneer's leadership in
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CABIN TEMPERATURE CONTROL —

A new electronic system, which controls cabin temperatures with extreme accuracy, has been applied to both steam and combustion type aircraft heaters. Three temperature sensitive elements in the system keep the cabin air at the selected temperature by maintaining the heat supply equal to heat losses. Overshooting is prevented by accurate control of heater discharge temperature.



ENGINE TEMPERATURE CONTROL —

Increased operating economy and longer engine life is assured by automatic engine temperature regulation. The Honeywell control system, which can be applied to either electric or hydraulic actuators, maintains cylinder head temperatures on one or more engines within a few degrees of the temperature selector setting. Because of its small size and proximity to the combustion chamber, the temperature sensitive element, responds accurately and quickly to temperature changes.



VALVES AND SWITCHES —

Many aircraft control problems require only the use of electric valves or pressure operated switches. Honeywell valves and switches are scientifically designed for maximum dependability and minimum weight. Typical units are the Altitude Warning Signal Switch, which sounds an alarm when the pressure in a pressurized cabin drops below a safe minimum, and the two solenoid valves for heater control illustrated here.

Honeywell Controls

FOR TOMORROW'S AIRCRAFT

TODAY we can point with pride to the creative engineering by Honeywell which helped produce Allied air supremacy and resulted in decisive victory. Tomorrow, this same creative engineering will help to improve performance of all types of aircraft. Even now it is helping aircraft designers and manufacturers with any and all problems. The Honeywell program includes a complete flight research department, test aircraft, and thousands of dollars worth of testing equipment. In addition, trained application engineers, with broad experience in the use of aeronautical and industrial controls, will collaborate with aircraft manufacturers and airlines in developing the most practical equipment for each specific problem. Their work includes consulting service and flight testing at the customer's plant. These men can help you in the application of Honeywell equipment to your control problems. Minneapolis-Honeywell Regulator Company — Aeronautical Division, 2835 Fourth Ave. S., Minneapolis, Minn.



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CONTROL SYSTEMS

International Regulations Require Single Authority

Warner Says Universal World Code Required

RULES relating to the regulation of competition among international airlines automatically require some international authority with "the duty of applying the rule to the particular case". PICA Council President Edward P. Warner told members of the National Foreign Trade Council at their annual meeting in New York City.

In air transportation, the tide has been running toward regulation to lessen the "rigors" of competition or restrict its extent, Warner said.

If there were to be free competition in international services, with no special certification by national or international authority required, there would be numerous competitors in some cases. Warner cited the points of London and Brussels, which might both be touched by Swiss, Czech, Yugoslav and other European airlines connecting their territories with London; by American and Canadian lines connecting North America with central Europe; and by local British and Belgian services—all of them competing for London-Brussels traffic. Fear of such a situation is the basis for objections to the "Fifth Freedom".

There are always some who stress the advantages of competition and others who stress the dangers of waste and conflict from competition in excess, he said. "Certainly both benefits and dangers are there."

There has been widespread agreement that schedules should be increased only as the demand for traffic justifies, Warner said "and never for the purpose of smothering a competitor; but there has been less agreement on how to phrase the prohibition of smothering tactics and how to enforce it". It is clear that rules against "wastefully profuse operation" will require international authority to enforce them.

Until there is a universal code, he continued, the operation of international airlines will generally depend upon special agreements among the nations, but to cover the world, several hundreds of bilateral agreements would be needed, and almost no one favors this situation.

The International Air Services Transit Agreement—the Two Freedoms Agreement—has made a major breach in the rule of bilateralism, Warner pointed out. Twenty states have given one another free right of passage permitting free physical movement of aircraft. This advance is actually the much-discussed freedom of the seas applied to the air. It is not generally appreciated because of disappointment that agreement is not still broader. But it is the natural and necessary preliminary step to rules for purposes of air commerce.

Almost everyone deplores rate wars, he declared. Airlines will follow the ocean carrier pattern of regional conferences, Warner stated, alluding to but not

naming the International Air Transport Association. But still, governments are likely to retain "a veto on the action of their own airlines, or of those of foreign nationalities which touch their territory". Once again, this raises the question of whether the veto should remain in the hands of individual governments or of some international body.

International air transport is one of a steadily growing number of "economic and social specialties" that are being dealt with in specialized international organizations, he said. If nations do well with air transport, they increase the chance of doing well elsewhere. Warner said that one of the most important immediate objectives is the standardization of procedures and measurements. This means that some nations must make the sacrifice of giving up much of the practices they have developed over the years to suit local operations. The only alternative is the "palliative" of duplication. What is needed is the permanent "cure by surgery".

The most obvious need for standardization is in the technical organization of airways, he continued. Practices change from nation to nation, and from continent to continent. Because of the number of languages in a limited area, European practice in aircraft-ground communications has long depended on telegraphic code and a radio operator in each aircraft. American practice has adopted voice com-

munication, with pilot talking to ground stations.

He said systems of measurement must also be standardized. The need for separate production of metric and English models and parts is obviously unfortunate. The need for switching from one system to another in operations—such as on transatlantic runs—is also wasteful, complicated, and can even be a hazard. One system must be adopted universally; the other eliminated. Surgery is the only final answer, Warner stated.

A final occasion for international action is the elimination of expense and delays by forms and procedure. Shipping tempo won't do for air travel. When business men may go overnight from New York to Paris for a single conference, such speed loses its advantage if days are required for paper clearances. It should be possible to start on an hour's notice. One good sign is the planning of customs-free airports, in which Eire has taken the lead, to avoid the repeated holding-up of aircraft in each country. He said all travel and shipping requirements should be tested with the question: "Is this fit to exist side by side with a 300 mph transport airplane?"

Brazil May Be First

Brazil is expected to become the first nation in the Western Hemisphere to complete ratification of the permanent Convention on International Civil Aviation, according to the State Department. The document was ratified in Rio on Sept. 11 but is not yet in effect because the official instruments have not reached the State Department. The United States is the depository government and, by the terms of the Convention itself, adherence dates 30 days from the receipt of the formal documents.

NAA Directors Push For Single Defense Setup

Oppose Regulations For Non-Scheduled Flying

National Aeronautic Association's board of directors last fortnight urged Congress to enact immediately measures to establish a single department of National Defense in which the Army, Navy and Air Force would occupy co-equal status.

At its meeting in Oklahoma City during the National Aviation Clinic, the NAA board asked its 18,000 members to inform the U. S. Public of the reasons for enactment of such legislation.

Incorporation into the NAA structure of a new national Flying Farmers Association was approved in principle by the board upon request of an organizing committee composed of members of the Oklahoma Flying Farmers chapter of NAA. Details will be worked out in further conference.

The board also went on record as opposing economic regulation of non-scheduled aviation and asked CAB to disapprove its examiners' report. The pro-

posed Part 42 was opposed as a "back door method of economic regulation".

The special Lea Subcommittee of House Interstate and Foreign Commerce was asked to postpone for at least several months the November deadline for submission of replies to its questionnaire into integration of all transport systems. The committee was urged to consult the five major transport studies which have been made by public and private agencies in the past few years.

Congressional conference committees now meeting on the federal airport bill were asked to reconcile discrepancies between House and Senate versions and provide that 65% of all federal aid money be earmarked for Class 1, 2 and 3 airports in order to fill a need for small landing facilities in cities and towns of all sizes.

CAA was urged to use all means to get money for continued federal operation of control towers at major airports along federal airways systems.

NAA's first national convention since 1941 will be held July 19-20, 1946 at Omaha, Neb.

Europe's Economy Found To Be Badly Dislocated

Distribution System Was Completely Wrecked by War

By W. W. P.

BERLIN—The dislocation of Europe's economy and the wreckage of any sort of distribution system as a result of the war is not better illustrated than an airplane hop of a couple of hours from Copenhagen, Denmark, to Berlin.

It is amazing how many cases of food are to be found in Europe and how a hundred miles away people are on the starvation line. Sweden has plenty of food, as is well known. Across the border in Norway people are just getting by with the barest rations.

Denmark is another oasis of food. There are eggs, cheese, milk, butter and meat in abundance. But nearby Holland is extremely low on food.

Unlike Stockholm, Copenhagen is not a bright city despite its prosperity of food. Denmark has almost no trees for wood and no coal source whatever. Thus it has been acutely short of fuel for heat and power all during the war. All restaurants and cafes close sharply at 10 o'clock and hot water is a rarity. But in the chief restaurants, such as the Viking or the Wivex, one can have a steak with one or two fried eggs on top—Danish style. Milk is in abundance.

Rooms At Premium

Copenhagen is crowded. Hotel rooms are at a premium and the British are pretty much in control of the city. Rooms for Americans are scarce because the top British officer considers Americans to be "arrogant and superior." It is probable that military control will be removed within a short time and the Danes can get back to something like a normal life. They are doing what they can to provide food for other countries and bacon, today, is scarce in Copenhagen because of the huge quantities being shipped to England. The Danish kroner is worth about 21 American cents, slightly under the pre-war level, and living costs are about the same as in the U. S. Most of the shops which were well supplied during the war with silver, glassware, steel, etc., have been cleaned out by American and British troops. Most such shops have bare shelves now but the Danes have prospered as a result of the sales.

Cigarets are very scarce, in contrast to Sweden which has an abundance at high prices. And what surprises Americans are the women smoking cigars. Yes, full-sized cigars. Even the girls smoke them. I believe it is true that the Danish women smoked cigars before the war but the absence of cigarettes has probably increased their use. Boys and men follow Americans who are smoking, waiting to pick up the butts and although cigarettes do not bring the high ten dollars a pack that they bring in Berlin, the black market price is still quite high—several dollars a pack at least. The Danes are cigaret-mad.

Copenhagen is one of the few cities in Europe where both men and women can be seen drunk in public. Not many, of course, but it is evident. The women are extremely friendly, more so than in any country in Europe, a phenomenon which is the subject of conversation in every bar in Europe. Fantastic things occur in Copenhagen.

Taxicabs are very scarce, but not expensive when you are lucky enough to get one. Restaurant service is good but a little over-rated once one has been in Stockholm where it is truly superb. But one can have fresh red raspberries in rich cream for dessert in November. And as one American exclaimed on drinking his milk, "Damn it, this milk is almost spoiled—it's got real cream in it."

To hop by plane from Copenhagen to Berlin is a transition from day to night. Flying over the country is just one bombed city after another and Berlin itself still ranks as one of the most colossal monuments in all history to utter destruction by man-made weapons. I saw Berlin fairly well in July, two weeks after the U. S. moved in and when the smell of the dead was still not difficult to find. But the more I have driven around the city the more I am appalled at the vast extent of the destruction and the seemingly hopeless job of putting the city back together again.

It's going to be a tough winter in Berlin as in all parts of Germany, Austria and eastern Europe. One well-qualified war correspondent estimates that one million persons will die from lack of food in Poland. Russian-occupied Germany is an enigma and no one in the west knows what is going on, but there are high estimates for the death toll. Another war correspondent estimates ten million deaths in all of Europe from starvation and disease this winter, but this estimate seems too high.

Coal Greatest Need

Major General Oliver P. Echols, who is in Berlin as General Clay's deputy in the Group Control Council, painted a grim picture to me about conditions. Coal is the greatest single need and during October the Americans got only 40% of the coal previously allocated to it—production is simply too low. Miners are getting 3,000 calories a day but this isn't enough. In Berlin the average person is said to be getting about 1350 calories a day. The American GI gets 4,000 a day. Transport of coal is a big problem, too. No Berliners will get coal for heating this winter and this means that many will really be cold because many homes are without glass or complete protection from the elements.

Some of the major boulevards and avenues have been cleaned up since July, although a newcomer to Berlin would wonder how much worse the city could have been. Many new shops have opened up. The second to fifth floors of a building may be gutted, or just a shell, but on the ground floor the rubble has been cleaned out and a shop opened for business. But there is little to sell.

Berlin is dark at night. Street lights are found only in the Tiergarten and Unter den Linden. It isn't a complete blackout because lights shine dimly from homes and apartments, but it isn't pleasant to walk around after dark. A flashlight is needed. Even driving is difficult because of the bomb craters and holes in the streets.

There is a semblance of night life but it is pretty terrible—and very expensive. The effort to have fun is awfully forced and rather hollow considering the surrounding ruins. I went to a new so-called night club called Rio Rita where the poisonous drinks were 45 marks each—four dollars and fifty cents. On the food menu for Germans who had the coupons was the piece de resistance of the evening, a plate which looked like steak, carrots and toast, but which was in reality fried potatoes to resemble steak, a few carrots, and two thin pieces of toasted bread. Not very inviting. Good liquor is unobtainable at any price in restaurants and cafes. Whoever talks about Berlin night life does so with a tongue in cheek—it is far from typical of Berlin, is very forced, and very tacky. And everything starts to close at 9:30 p. m. because there is a curfew for German civilians before midnight.

Erect War Memorial

Fraternalization is, as might be expected, a vast success and a booming business. The difference between the Russian section, where a gun may be used for persuasion, and the American section where chocolate bars and cigarets are used for persuasion, is merely a matter of relativity and finesse. The result is identical.

The Russians have erected a huge war memorial in the Tiergarten, between the 1870 War Memorial and the Brandenburg Gate, complete with statue, pillars, tanks and flowers, and it should be ready for dedication at any time because work has been in progress day and night. The monument will be a reminder to the Germans of the historic conquest.

In July it seemed that the work of cleaning off the streets and sidewalks was progressing very well, but in November one can see only slight evidences of cleaning up. This is because the job is so stupendous. The estimate of 20 years to rehabilitate and rebuild Berlin is probably accurate. If ever there was evidence needed of the effectiveness of airpower in destroying a city, Berlin is it. And what the bombers left undone the Russians accomplished with street fighting.

Black market activities continued unabated. As one Pfc explained it, half the Army is engaged in trying to keep the other half from sending home ill-gotten gains. A package of cigarettes brings ten dollars in occupation marks, and a carton a hundred dollars. If you have a carton you can make a hundred dollars in as short a time as you can hand out the packs and take in the money. Then the job comes of getting your money home—and the Army is trying to enforce restrictions. But it is very difficult because high officers as well as GIs have been "cleaning up." Fortunes have been made in Germany since July. Many GIs are worth twenty-five to fifty thousand dollars by trading in the black market.

Officers have cleaned up even more. There are stories current of officers who have sent home sums ranging upwards from seventy-five thousand dollars.

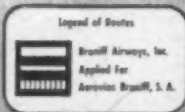


Yesterday's Miracle **IS TODAY'S HABIT**

Flight has become an essential part of
our modern commerce and culture.

Braniff's proposal for a coordinated domestic and
international air transportation system in
the Western Hemisphere will eliminate distance and
border delays between the United States
and Latin America, add much to trade, income and good
living for all, and contribute substantially to our
national objective of full employment.

BRANIFF AIRWAYS



Anyone who has a few American dollars can clean up in fast order by engaging in the currency black market. Incredible as it may seem, a single American dollar will bring as high as 170 marks or seventeen dollars—a 17 to 1 ratio. Thus a thousand dollars in American bills could be rolled up to seventeen thousand dollars in marks providing the seller can get those marks transferred back into American currency, which is now very difficult. For purchasing of chinaware, porcelain, silver and objets d'art, the American dollar is good for a 20 to 1 ratio.

Trading is the biggest activity in Berlin regardless of whether you are American, German, Russian, British or French. The black market in the Tiergarten, now off-limits to American uniformed personnel, flourishes every day with thousands of people participating, including plenty of Russians. The watch market has declined somewhat but a good watch will still bring four or five hundred dollars from Russians who are now looking over the goods with keener eyes and are making good buys.

Americans who have "loaded up" on German occupation marks through black market or quasi-legal dealings now have the problem of getting their marks into American currency. As a result they are buying tons and tons of books, objets d'art, ivory, silver—anything that can be shipped home. The stamp market is especially active.

Morale Very Low

Army morale is very low. Either the men are griping because they can't get home or are griping because they want to do a job and are handicapped by the vast policy mess in Washington and Frankfurt. The great Army machine deteriorated quickly in August after V-J Day. One officer's mess which I have been attending is just like a faculty dining hall and club in a midwestern city. It has all the smugness, all the cliques and all the petty pushes for power which one finds in a college atmosphere. And there are a great many Americans in uniform who live completely within the American Army routine and either have never been to downtown Berlin or rarely see anything of the city or know what is going on.

There is trouble ahead. At Frankfurt I saw a scene disgusting to any real American. In front of the railway station which had to be put off limits because of fights, sexual promiscuity and castrations of several American GIs by German youth or Poles, the GIs were parading around, some of them drinking in front of Germans, some of them drunk, most of them (including Negro GIs) picking up German girls—and all being watched by small gangs of tough-looking, resentful German youth and gangs of tough Polish youth. It is no wonder GIs are being permanently injured, or castrated, or shot, for they are asking for it in public and the officers and Military Police seem to be inclined to let an absurd situation continue. Within 90 days I predict uniformed Americans will be carrying guns.

Radar Countermeasures May Have Commercial Application

Jamming Devices Open Up Communications Spectrum

RADAR countermeasures, a top secret project which was credited by one Nazi scientist as being the deciding factor in laying German cities open to obliteration bombing, were officially unveiled to the public last Wednesday by the Army, Navy and Office of Scientific Research and Development.

Headquarters of the OSRD project was the Radio Research Laboratory at Harvard University where scientists from universities and industry accomplished electronic miracles in less than three years which might well have taken 50 or 100 years under normal peacetime procedures. And today, while the actual RCM devices developed and put in use are strictly limited to wartime application, the basic research undertaken and the information gained in their development may well prove of even greater value to peacetime and commercial aviation than the development of radar itself.

Briefly the countermeasures development program consisted of two parts—means of seeking out enemy radar transmitters, and obtaining exact information as to their location, purpose, and the frequency on which they operated; and means of destroying their effectiveness, and rendering them useless. The former was accomplished by specially equipped ferret planes carrying receivers to pick up enemy radar transmissions, directional antenna to locate them specifically, and equipment to analyze the pulse, frequency and other pertinent data.

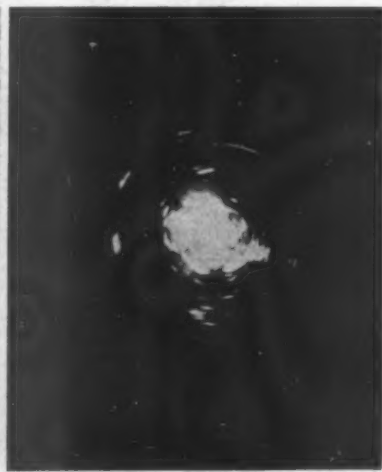
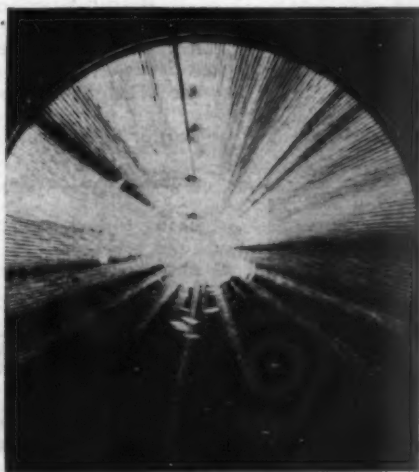
The actual countering of the enemy radar was then accomplished by two means—window and electronic jamming. Window, which was first developed simultaneously by the Germans and the British, consisted of dropping foil strips from an aircraft which had the same effect on the enemy radar as an aircraft. Thus a few aircraft dropping window

could set up the effect of a thousand bomber raid and when every bomber on a raid dropped window, it completely clouded the enemy's radar scope and rendered useless his radar anti-aircraft fire-control.

In general the Army used two types of window—chaff which consisted of bundles of foil strips resembling Christmas tree icicles, and rope which consisted of 400 ft. rolls of foil tape. Chaff was tuned to the particular frequency of the enemy radar and was particularly effective against the German microwave radar. Rope was untuned and was more effective against the lower frequency Japanese sets.

The second method, and the more important one from the standpoint of future commercial development, was electronic jamming where a continuous wave of noise was transmitted to cloud the enemy's radar scope with a phenomenon known as grass which rendered it useless. Electronic jamming could be performed from airborne sets which were carried by bombers, and from high powered remotely located ground stations. Two types were used—spot jamming, in which the jamming transmission was broadcast on a particular frequency on which the enemy radar was known to be operating, and barrage jamming which covered a whole range of frequencies.

The critical point in the development of electronic jamming devices was the development of high power continuous wave tubes that would operate on the high frequencies that radar pulse wave tubes operated on. It was the development of such tubes that made the electronic jamming portion of the countermeasures program so successful, and it is likewise this accomplishment that may revolutionize the entire field of aviation communications, and open up unlimited spectrum for communications use at a time when the shortage of available frequencies was reaching serious proportions.



Results of jamming are shown in these photos. At left is a normal screen image, while at right the radar screen has been jammed with wave noises.

Eire Calls North Atlantic Navigation Meeting

Inter-Governmental Group To Coordinate Facilities

By FRANK HOLZ

THE Eire Government, at the request of the Council of the Provisional International Civil Aviation Organization, has set April 8, 1946, for convening of an inter-governmental North Atlantic conference on air navigation. Countries invited are the U. S., Canada, Iceland, Great Britain, Norway, Sweden, Denmark, the Netherlands, Belgium, France, Portugal, and Eire.

This move is regarded as an initial experiment in international coordination of air navigation facilities and services. The North Atlantic was selected as the area where such coordination is considered most urgent.

The PICAO Council instructed its Air Navigation Committee to recommend other similar regional organizations. Initial Council discussions indicated that there may be as many as 20.

May, 1946, was selected for the first meeting of the PICAO Assembly comprising all the nations that have signed the Interim Agreement. No decision has been reached as to meeting place or exact date. The Council will recess for the month of December to reconvene early in January.

The PICAO delegates decided to sponsor the reactivation of such prewar regional organizations as TASSO (Transatlantic Air Service Safety Organization) and of European aviation conferences concerned with technical and operating matters.

PICAO Asks Notice

The Council requested that member nations give notice to PICAO of any plans to discontinue airway facilities under their control which are useful to international civil aviation. Notice should be adequate for PICAO to take any possible action before the facilities are discontinued or dismantled.

Following the recommendations of its Air Transport Committee, the Council also took the following actions:

1. Accepted the proposed forms for uniform statistical and financial reporting of international airline operations;
2. Authorized creation of a publications committee to advise on PICAO Council publications;
3. Directed the Secretariat to compile the Multilingual Glossary of air transport terms recommended at a previous meeting;
4. Directed the PICAO Secretariat to undertake the following studies in the field of international air transport:
 - (a) The development of air mail and its relationship to the economics of international air transport "with a view to reporting to the Council on the desirability of convening a conference on the international aspects of air mail services";
 - (b) Forms of cooperation in international air transport, including: airline pooling, operator traffic conferences, international organization of air services—with and without international ownership;
 - (c) Methods and degrees of cooperation in the ownership and operation of airports;
 - (d) The question of subsidies;
 - (e) Methods of simplifying and improving present and proposed reports and analyses;
 - (f) General studies on tariffs.



Prague Air Terminal—This modern appearing airport terminal is that of Prague, Czechoslovakia. While the buildings suffered no direct bomb damage, the field is run down from neglect during the war.

The main forms adopted (No. 1 above) for reporting operational and financial airline data are listed:

Group A—Operating and Traffic Statistics
Table 1—Service Pattern—Scheduled Services (monthly report); 2—Flight and Traffic. Kilometers flown, passengers carried, utilization, revenue tons, revenue ton-kms., etc. (monthly report); 3—Trans-Boundary Traffic Flow of Scheduled Services (monthly report); 4—Origin and Destination of Traffic in Scheduled Services (monthly report); 5—Flight and Ground Personnel (annual report); 6—Report of Operating Fleet (annual report).

Group B—Financial Statistics (all annual)
Table 1—Balance Sheet; 2—Profit and Loss Statement; 3—Statement of Earned Surplus; 4—Statement of Certain Expenses; 5—Taxes; 6—Subsidies; 7—Personnel Expenses.

Acceptance of the Third, Fourth and especially the Fifth Freedom of the Chicago Conference would introduce new dangers to international aviation unless accompanied by a multilateral agreement "to prevent freedom to compete from becoming freedom to quarrel." These views on the granting of commercial air transport rights were presented to the PICAO Council by the Canadian delegation, headed by Anson McKim.

The Canadians are the first to present any such document in response to the Council's request at the end of the August sessions for member nations to present their views on commercial rights—"one of the matters on which it has not been possible to reach agreement among the nations . . . convened at Chicago."

Need Multilateral Agreement

The Fifth Freedom (permitting originating traffic to be picked up by through-services for discharge in the territory of other states) can be acceptable only if it can be so applied as to provide the benefits of through-service without unduly cutting into the local traffic of states along the routes. A system of bilateral agreements can give no such safeguards. "A multilateral agreement is the only solution," the Canadian report concludes.

Beyond this, however, Canada urges that the successor to PICAO should have functions covering the matters of routes and frequencies and of guarding against unfair competitive practices in international civil aviation. Such an international body would watch over the interpretation of the rules established under a Convention by common agreement.

The Canadian statement hits at the attitude held by some that the Chicago differences are likely to remain. Chicago uncovered many points in common and this, together with the greater background

of discussion and understanding acquired in more recent months, will greatly assist any new effort. Failure at Chicago "most emphatically" does not mean that agreement cannot be reached by PICAO.

Among recent PICAO appointments was that of Ivor H. McClure to the post of Assistant Secretary-General in charge of the Air Navigation Bureau. McClure is at present director of the Operations, Services, and Intelligence Section of the British Ministry of Civil Aviation.

Chief of the Communications Section of the Air Navigation Bureau is to be Col. R. G. Nichols, who commanded the 68th U. S. Army Airways Communication System Group in the southwest Pacific during the war. E. A. Westlake was named chief of the Bureau's Section on Rules of the Air and Air Traffic Control. Westlake was chief of the Airways Traffic Control Section of the CAA since 1936.

N.E.I. Repatriation Route

A special managing board appointed by the Dutch Government is arranging for air services between the Netherlands and the Netherlands East Indies exclusively for the transport of government personnel and cargo, and the repatriation of former war prisoners and internees. British cooperation has been promised, particularly with regard to the use of intermediate bases between Amsterdam and Java. Dutch Government spokesmen state that the service has been delayed because some airfields are not in usable condition, rather than because of the present revolt in the East Indies.

Private Firms May Run Government Lines

British South American Airways (formerly BLAIR) and Railway Air Services are reported to be still carrying on with their plans in spite of the recent government announcement of plans to nationalize all British scheduled air transport. It is possible that these two business groups will be asked by the government to manage the public corporations to operate services to South America and to Europe respectively, as originally assigned to the firms by the Swinton White Paper issued by the preceding government. Whether the two companies will accept is not yet known.

Fins Operate Five Routes

Finnish Airlines is now operating five domestic services, including a service to the Aland Islands in the Gulf of Bothnia close to Sweden. The Finnish fleet is reported as five Junkers Ju-52s and two DC-2s. The Fins hope that the Russians will soon permit them to resume their prewar operations to Stockholm, probably in cooperation with the Swedish ABA which had been the only foreign commercial airline per-regular operation to Moscow during the War. Later the Finnish Airlines hopes to join in the Scandinavian pool for services to the U. S.

LORAN-an Aid



FIRSTS BY RCA

RCA has contributed many firsts in the field of airborne navigation. The metallically shielded loop antenna, which grew out of RCA research in marine navigation, has become a C.A.A. requirement on all transport aircraft for the reduction of precipitation static. The automatic direction finder, first developed cooperatively by RCA and Sperry, is now standard equipment in practically every military and commercial airplane. LORAN now joins these famous firsts, as RCA research and engineering continue to provide the best in airborne radar and radio equipment.

to Navigation!

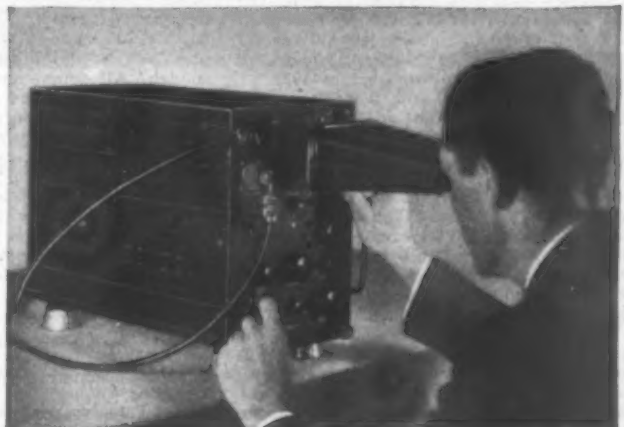
● RCA's APN-9 LORAN — a wholly new concept in long-range navigation—is the most-discussed topic under the hangar roof today.

Air Transport Command and contract airline pilots who have used LORAN on the Pacific routes of unpredictable tropical storms, and many other air routes throughout the world, agree that LORAN is the most accurate, dependable aid to long-range navigation yet developed. Even under severe static, LORAN's ability to discriminate visually, instead of aurally, makes possible the taking of bearings not feasible with previous systems.

How does it work? LORAN depends for its operation on a series of radio "lighthouses," which send out pulses that are keyed together by a radio link between stations. In the aircraft is a receiver, weighing only 35 pounds, that picks up these pulses and reproduces them visually on a "scope" tube. By noting the relative positions of these pulses on the screen, the operator can determine his position with great accuracy. The system is much more accurate

than loop direction finding — and the equipment required in the aircraft is smaller, lighter, more easily installed.

RCA, the basic designer of all airborne LORAN equipment used in this country, has been producing this equipment strictly for military installation. With the war over and restrictions lifted, RCA now makes LORAN available for commercial service.



RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

British Rail Monopoly Plans Integration of All Transport

Transport Association Hears Proposal from ABR Official

RAILROAD dominance of most forms of transportation in Great Britain was outlined by T. D. Slattery, general traffic manager, Associated British Railways, Inc., in a speech Nov. 8 before the Transport Association of America. TAA currently is engaged in promoting an integrated-transport program in this country. The Association has been termed a "Railroad Front" by the Senate Interstate Commerce committee.

Slattery said that the British railways owned 76 docks and harbors, more than half the total in the United Kingdom and the largest system of docks in the world.

They own and operate, he stated, a number of canals, own 130 short-sea mail and passenger cargo vessels, carrying approximately 5,000,000 passengers a year in peacetime; were Britain's largest owner of vehicles, operating 11,000 motor vehicles with an equal number of trailers, 20,000 horse-drawn vehicles and 10,000 horses.

Slattery said they had over 50 million dollars invested in associated bus operating concerns and over 12 million dollars in "road freight companies" (motor trucking concerns). They owned 70 hotels whose "services tie up well with the catering required on dining cars, station restaurants, and buffets. They have been in the air transport business since 1929."

Four Main Lines

On Jan. 1, 1923, Slattery said the 123 separate railways were amalgamated into four main line companies and certain jointly owned "light" railways under the authority of the railways act of 1921.

This grouping, he said, was on a geographical and not on an industrial or traffic flow basis and did not eliminate competition. Most of the great railway trade routes were still served by competitive tracks and many of the combinations were what might be called "end to end" consolidations; the act created a tribunal in which was vested full power to approve schemes of consolidation agreed to by groups and to enforce amalgamation where agreement was not reached.

Under the road traffic act of 1930, the railroads were enabled to take over bus and truck companies, through investment of capital in selected companies that could be expanded by further acquisitions and amalgamations into units that could adequately meet the public requirements.

"Relieved of the disturbing influences of unbridled rivalry, the transport companies have been able to extend to the public greatly improved services", he stated.

"As to the role of the British railways in air transport, the four main line companies were granted powers to operate air services within the British Isles and to the continent of Europe, within limitations, in 1929. These powers included:

(a) The right to own aircraft and to operate air services for passengers, baggage, freight and mails;

(b) The right to enter into agreements with and to invest money in other undertakings owning and operating air services;

(c) The right to own and construct aerodromes and to enter into agreements with other owners of aerodromes.

"They were also empowered to maintain aircraft but were specifically prohibited from manufacturing aircraft themselves—all aircraft had to be obtained from aircraft manufacturers," he said.

Not until 1933 were the powers granted the railways exercised. In April of that year, the Great Western Co., in conjunction with Imperial Airways, Ltd. inaugurated an experimental air service for passengers between Plymouth, Torquay, and Cardiff and shortly afterwards this was extended to Birmingham. It was in March, 1934, that the four group railroad companies formed a new company under the title of "Railway Air Services, Ltd." which was designed as the operating instrument for any services the operators might desire to open within their respective areas of surface transport interests.

Believe in Air Future

"The functions of railway air services were agreed as being to provide a link between the various railways whereby experience gained in aviation might be pooled and competition between the parties avoided and to give a central control of the actual flying operations. The practice has been for each company to provide the aircraft and other equipment needed for flying the routes it sponsored, pay the whole of the operating costs of those routes and take the receipts while Imperial Airways (subsequently the British Overseas Airways Corp.) have provided the flying and engineering personnel. All commercial and accountancy matter relating to the services flown have been covered by the appropriate departments of the railway companies," Slattery stated.

"As to the future, the railways have affirmed their belief in the future of air travel as a primary means of transport. The railways' scheme for postwar air development was placed before the government in October, 1944. In that scheme the railways proposed, among other things, the following:

(a) to operate over all the main and subsidiary routes, without subsidy, on the assumption that, by agreement between governments, no subsidies will be granted to anyone in the European field.

(b) to form a new company to operate the network.

(c) to offer partnership with other air operators and with short sea shipping interests who operated regular surface routes before the war similar to their own cross channel services.

(d) to give the public complete inter-availability over their land, sea, and air network.

TACA Speeds Up Services

TACA has announced that daily flights from Havana to British Honduras and Central America were inaugurated on Nov. 15. Service between Central America and Mexico was also increased to a daily schedule.

DDL Plans to Fly to U. S. Early in 1946

DDL, the Danish Air Lines, is a vigorous little airline which will be flying to the U. S. sometime in 1946 and thus will join the big-time operators. It is in the Scandinavian Airline System pool with the Swedes. William Damm, one of the top DDL officials, very kindly gave me information on the airline's plans and present operations when I was there recently.

Currently DDL has two B-17 Fortresses, obtained from Sweden, which operate daily to England and other points. It carries 22 passengers—14 on seats and 8 on benches. It is not a comfortable way to travel but DDL has no other equipment available.

It also has one Focke-Wolfe 200, four-engined German Condor, which it flies to Stockholm and sometimes to London. It has two Focke-Wolfe 12s, oldtimers which have three small engines and which get in and out of postage stamp fields.

On order are three Douglas DC-3s, of which one has been delivered and one is on the way, and two DC-4 Skymasters which DDL hopes to obtain by March. The latter will be used for trans-Atlantic operations.

Schedules are maintained as follows: Copenhagen-London, daily. Copenhagen-Aalborg-Gothenberg, daily and Copenhagen-Aalborg, twice daily. Copenhagen-Bornholm (Danish island now occupied by the Russians), twice daily. Copenhagen-Malmö, four times daily. Copenhagen-Malmö-Stockholm, daily, with a three-weeks backlog.

DDL occupies space in a handsome office building in the center of Copenhagen just off Rådhuspladsen, and near the famous Viking Restaurant in the Palace Hotel. Several of the top officials of DDL were away in the U. S. A. or in England when I arrived there. The quarters at Kastrup Airport, the pride of Copenhagen, are adequate. Kastrup is a well-operated airport with fine restaurant in the passenger terminal.

Prior to the war DDL operated to many parts of Europe. Currently it is negotiating with the French to land at Le Bourget and by next spring should have extensive operations to various European capitals.—W. W. P.

Philippine Lines To Resume Service With Surplus Aircraft

The U. S. Department of Commerce reports that arrangements have been completed for the resumption of air transport services in the Philippine Islands by the two companies operating there before the war: Iloilo-Negros Air Express and Philippine Airlines, Inc. It is expected that each company will receive three passenger aircraft from U. S. surplus. Both these companies have been purely Philippine enterprises up to now, but there is a rumor current that TWA is negotiating to buy Philippine Airlines.

The Bureau of Aeronautics, similar to the U. S. Civil Aeronautics Board, which controls civil aviation in the Islands, was recently re-established.



Luxurious lower-deck lounge of the Stratocruiser

BUY VICTORY BONDS

London—660 minutes by Stratocruiser

Some millions of Americans have recently made new friends in countries all around the globe. Many of those friendships will continue to flourish. For there are no longer any "far-away places." The Boeing Stratocruiser will measure in hours the distance to any spot on earth.

You would expect such an airplane from Boeing—world's leading builder of four-engine aircraft, pioneer in supercharged planes for over-weather stratosphere flight, and creator of the mighty B-29. And the Boeing Stratocruiser will not disappoint you. It is what you want and the airlines need.

The Stratocruiser brings a new, unprecedented standard of performance, operating efficiency and reliability. For it makes full use of the aerodynamic, structural and mechanical advancements

developed by Boeing for big bombers and transports during the war. It has a maximum cruising speed of 340 miles per hour and provides exceptionally low operating costs over a wide range of flying distances—from 300 to more than 3000 miles.

Most versatile of all large aircraft, its spacious double-deck design and big payload capacity fit the Stratocruiser for almost every type of medium or long range operation. In the standard, domestic version, 81 passengers may be carried—67 on the upper deck in large, comfortable reclining chairs and 14 in luxurious seats in the lounge—with ample luggage and cargo capacity. As a de luxe transocean plane, the Stratocruiser will accommodate 75 passengers on daylight trips or at night—provide 30 unusually spacious berths plus 15 additional seats—together with

baggage and cargo. As a "commuter" transport, it can seat 114 passengers, and in all-cargo operation its 19½-ton capacity and easy-loading provisions make it outstandingly efficient.

For any of these kinds of service, the Boeing Stratocruiser offers the lowest direct operating cost per ton mile achieved by any existing aircraft. To meet the need for all types of feeder and main line operation, other Boeing transports are also on the way.

The extraordinary performance of the Stratocruiser stems directly from Boeing principles of research, design, engineering and manufacture. You can be sure that any airplane "Built by Boeing" is built to lead.

DESIGNERS OF THE B-29 SUPERFORTRESS • THE FLYING FORTRESS • THE NEW STRATOCRUISER
THE KAYDET TRAINER • THE STRATOLINER • PAN AMERICAN CLIPPERS

BOEING

Removal of Sales Tax On Aircraft Asked By AITA

Canadian Industry Being Handicapped by Tariffs

REMOVAL by the Canadian government of the eight percent sales tax on aircraft was urged at the annual meeting of the Air Industries and Transport Association of Canada Nov. 19 at Montebello, Quebec.

The resolution on the sales tax followed recommendations implied in the opening address by R. B. C. Noorduy, vice president and general manager of Noorduy Aviation, Ltd., who pointed out that the aviation industry in Canada was handicapped by the indeterminate status of customs tariffs and foreign trade relations. Noorduy stressed the importance of a reasonable expectation of normal business profits. He questioned whether the heavy business risks involved in the development of the Canadian aviation industry "can and will be taken under anything like prevailing and immediately prospective rates of taxation".

The airplane is such an important implement for the expansion of the Canadian economy—particularly through the development of the country's natural resources—that any handicap such as that imposed by high costs of equipment and operations must be avoided in order that a domestic industry may be built up, he said. The possibilities of both the domestic and the export markets must be considered.

Linked to Developments

Noorduy remarked that the progress of the aircraft industry in the near future is linked with two major technical developments: the use of atomic energy and of new prime movers—jet, rocket, and turbine. We are on the threshold of a new era in which all hitherto general accepted limitations of speed and performance "have already been surpassed."

Edward P. Warner, President of the PICA Council, stated at the AITA annual dinner that bilateral agreements for mutual recognition of airworthiness of imported aircraft were not wholly successful. Assurance of certification for imported aircraft is likely only if "substantial uniformity of design requirements is first attained".

"When one begins to legislate for the aircraft industries and users of the whole world the number of interested participants quickly reaches auditorium figures". The difficulties are great but the attempt must be continued. Standardization of airworthiness requirements "under international auspices is, in fact, the condition precedent to any general authorization of free international trade in aircraft", Warner stated.

AITA elected the following officers and directors for the ensuing year: President, C. H. Dickens, vice-pres. and gen. manager of Canadian Pacific Air Lines; Vice-president, Grant MacDonald, president of MacDonald Brothers Aircraft, Winnipeg; Treasurer, P. C. Garra, de Havilland Aircraft of Canada; Secretary, W. F. English,

vice-pres. of Trans-Canada Air Lines; Executive secretary, W. B. Burchall, Ottawa (reappointed); General representative, A. J. Veit, Ottawa (reappointed); Directors are: W. N. Deisher, Fleet Aircraft, Limited; C. R. Leavens, Leavens Bros. Air Services; C. R. Troup, Aircraft Industries of Canada; R. B. C. Noorduy, Noorduy Aviation Ltd.

BOAC Official Named To Head IATA Group

A. C. Campbell-orde, assistant to BOAC chairman Lord Knollys, was elected chairman of the Technical Committee of the International Air Transport Association (IATA) at a meeting recently held in New York City. Andre A. Priester, vice president and chief engineer of Pan American Airways, was named Committee vice chairman.

At the same meeting, the Technical Committee appointed eleven subcommittees which correspond, in general, to the technical subcommittees of PICA. Present IATA subcommittee memberships are temporary, valid only until the first meeting of each group.

The subcommittees and their temporary chairmen are as follows:

Aircraft Maintenance Practices, J. T. Bain, TCA; Airworthiness, R. W. Ayer, American; Personnel Licensing, S. B. Kaufman, PAA; Airline Operating Practices, Kenneth Ferguson, Northwest; Airways Systems, Landing Areas, and Ground Aids, Carl Kneisel, PAA; Communications Systems, H. C. Lueteritz, PAA; Rules of the Air, Wing Comm. G. C. Cunningham, BOAC; Accident and Investigation, Jas. H. Smith, Jr., Panagra; Search and Rescue, T. A. Boyd, American; Meteorology, Allan Clark, PAA; Aeronautical Maps and Charts, F. E. Proudfoot, TCA.

New Aviation Policy Is Looked For in Brazil

Changes in Brazil's aviation policies are expected as a result of the resignation of President Getulio Vargas and the change in the government, including the replacement of Air Minister Salgado Filho by Maj. Gen. Armando Trompowski. The new Air Minister is said to be an intimate friend of Brig. Eduardo Gomez, presidential candidate, and has been described as a firm supporter of "a national policy which gives full support to Brazilian commercial aviation."

According to past public statements, Trompowski believes that all the commercial air services organized and operated by Brazilian military forces should be carried on by private enterprise. Less is known about his attitude on international aviation, but observers recall that he has stated that international airlines can operate to Brazil without participating in domestic air traffic.

Lack of Ground Work By U. S. Flag Air Lines Is Puzzle In Europe

BERLIN—Puzzling to Army and civil officials jointly is the paucity of representatives of the three certificated American flag carriers in Europe. Having been granted CAB certificates in July, and having been operating their future civil routes under contract to the Air Transport Command, the month of November has arrived with virtually no civil airline men stationed in Europe and virtually no groundwork accomplished with regard to local facilities, passenger accommodations, traffic arrangements, local transport and the like.

Army personnel are anxious to turn over the ATC operations to commercial services and redeployment has seriously affected the efficiency of handling ground matters especially with regard to civilian revenue passengers. Even the handful of civil airline men in Europe are uninformed about plans and not being advised of actions in the U. S.

Greatest need at the moment is experienced contact representatives who know governmental relationships, local airport problems and especially hotel, currency, passport and other matters. Noteworthy is the fact that BOAC has experienced contact men everywhere. So do Sweden and France.

An example of how the transition is lagging is the frequent weather delays in ATC contract service with C-54 aircraft. Hotel accommodations are very short everywhere in Europe and the depleted ATC ground personnel are now inadequate to handle revenue traffic. One plane-load of C-54 passengers from the U. S. was held up two days in the capital of a northern country and the passengers slept in a school house. There actually were modest hotel rooms available in town but ATC is apparently not equipped to handle such facilities.

The result was that the civil revenue passengers blamed the contract carrier, not ATC, for the poor handling, all of which harms the carrier's commercial prospects later on.

It is conceded that operation-wise, the three U. S. flag carriers have made progress, but operations are only a small part of whole U. S. aviation picture in Europe and American civilians are hard put to it to make the florid press release stories of forthcoming commercial services jibe with the virtually non-existent representation of the carriers in Europe. Especially surprising is Pan American, which has never been short of contact personnel in Latin America, but which draws a complete blank in Europe to date except for men in London and Lisbon who are some years behind in their knowledge of today's aviation picture in America.

Redeployment has severely curtailed ATC services in Europe and, as a consequence, has curtailed its over-all service efficiency through no fault of its own. The need for liaison men—experienced in European matters and not playboys—is increasingly great. Consensus over here is that newspaper stories should be backed up by representation in preparation for commercial services.—W. W. P.

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Our engineers and executives grew up in the aviation field. They appreciate its current problems, its future needs.

For nearly a decade the Aireon Hydraulics Division at Burbank, California, has collaborated with most of the leading airplane manufacturers in the design, engineering and production of precision hydraulic and electro-hydraulic actuating units.

Aireon completes its war job with ample financial resources, the finest in plant and equipment, and more important, a stand-out engineering staff and research laboratory.

These facilities and abilities will continue in the service of the aircraft industry. Consult us without obligation.

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Radio and Electronics • Engineered Power Controls

Senate Restores Billion to Aviation Funds

Budget Bureau and House Rebuked For Military Cuts

THE Bureau of the Budget, which has repeatedly slashed to the bone future funds for the military phases of aviation, and the U. S. House of Representatives which recently made additional cuts of its own, were sharply rebuked last fortnight by the Senate when the upper house restored more than \$1,000,000,000 to Army and Navy aviation funds in the postwar rescission bill.

The Senate action followed a blunt warning from Gen. H. H. Arnold, commander of the Army Air Forces, that the House-approved reductions would mean virtually the liquidation of the AAF and would relegate its equipment to such a stage of obsolescence as to put it far behind any other major nation.

At press time, Senate amendments to the rescission bill remained to be ironed out in conference with the House, but it appeared probable that the Senate action would be sustained.

Major effects of the Senate action on aviation funds included:

- Added \$85,000,000 to AAF funds for research and development, providing a total of \$200,000,000.
- Added \$87,256,500 to Naval aviation research funds for a total of \$148,256,500.
- (Original AAF request was for \$245,000,000, trimmed to \$115,000,000 by Budget Bureau. Navy's Bureau of Aeronautics asked for \$148,256,500, was whacked down to \$61,000,000 by Budget Bureau.)
- Increased Navy's appropriation for operation and maintenance of aircraft by \$69,351,700 to meet Navy's original estimate of \$835,050,800.
- Restored \$564,000,000 for AAF operating expenses.
- Restored \$5,100,000 to Navy for flight facilities for reservists, sufficient to carry on until Congress authorizes a permanent reserve program.
- Restored sizeable portion of Navy Bureau of Ordnance research funds, including many aviation items. Navy's request set up an 80% reduction from wartime funds, Budget Bureau increased it to 85%, and the House cut it further to 87%. For instance, BuOrd asked for \$12,889,657 for guided missiles. Budget cut this to \$5,395,000 and the House sliced it to \$4,855,000. Senate restored it to the Budget Bureau figure.

• Other sums restored by the Senate included: Radar, \$3,946,000; aircraft fire control, \$1,500,000; anti-aircraft fire control, \$3,660,460; rocket bodies and metal parts, \$1,050,000.

Most emphatic of Gen. Arnold's statements before the Senate Appropriations Subcommittee was that the proposed appropriation reductions would mean: "We will be unable to maintain any combat air units in the United States in a state of training where they could conceivably defend the continent in case of need."

Congressional News in Brief

By Gerard B. Dobben

SOME opposition has developed within the House Rules Committee to the adoption of House Resolution 318 which authorizes a projected postwar investigation of all forms of transportation for the purpose of recommending legislation designed to bring about a greater coordination, possibly integration, of transportation services. One member of the Committee has stated that such an investigation, based on the phraseology of the resolution, would infringe on the jurisdiction of the Banking and Currency, the Ways and Means, Labor and perhaps other committees of the House. Meanwhile the Interstate and Foreign Commerce committee is continuing the collection of data, via the questionnaire route, on various phases of the transportation question and if Rules Committee disapproves H. R. 318 which provides funds for the investigation, it will write a bill based on the questionnaire returns and hold hearings thereon.

Rep. Adolph Sabath (D., Ill.) chairman of the House Rules Committee, told this reporter last week that he definitely favored legislation which would grant the railroads, steamship and bus companies permission to operate air services.

Three pages of eulogies are contained in the Nov. 12 Congressional Record to the memory of Jack Nichols, TWA Vice President and former member of Congress from Oklahoma, who was killed in an Army plane crash Nov. 7 at Asmara, Eritrea. Ironically Nichols came to prominence in aviation circles as chairman of a Congressional committee appointed to investigate aircraft accidents. He also was leader of the fight to establish a permanent standing committee on Aviation in the House—an issue which bobs up periodically.

Hearings on railroad legislation continues to block consideration of important aviation bills by the House Interstate and Foreign Commerce committee. Such bills as those providing for the reestablishment of the Civil Aeronautics Authority as an independent agency of government, elimination of multiple taxation of air carriers, standard insurance laws relating to indemnities for injuries or damage caused by aircraft, are gathering dust in committee pigeon holes. Aviation legislation today deserves better treatment.

Rep. Margaret Chase Smith (R., Me.) has introduced H. R. 4611—a bill providing for the establishment of meteorological observation stations in the Arctic region for the purpose of improving weather forecasting service on U. S. international air transport routes. This is a companion bill to the one introduced by Sen. Owen Brewster (R., Me.) which recently passed the Senate.

Rep. Edward H. Rees (R., Kans.) on the floor of the House attacked the War Department policy involving the destruction of 16 "almost completed" B-29 Superfortresses at the Boeing Airplane Co. plant, Wichita, Kans. "Here is the irony of the situation, while the Government is junking uncompleted airplanes on the ground as 'surplus,' more than 100 B-29 airplanes are in the process of completion in Seattle right now," Rees declared.

More than 30 Mississippi Valley congressmen, led by Rep. Overton Brooks (D., La.) have petitioned Postmaster General Robert E. Hannegan to use his influence in extending air mail pick-up service to the smaller communities in Louisiana, Mississippi, Arkansas and east Texas. Rep. Brooks, who took the petition personally to Hannegan, stated that the Postmaster General said his Department would give careful thought and study to the air mail needs of the area and convey its conclusions to the Civil Aeronautics Board.

Rep. C. E. McKenzie (D., La.) has under consideration the introduction of a bill which would provide for the carrying by air of all first class mail where such air transportation would expedite delivery. Already before the House Post Office and Post Roads committee is a bill which provides for carrying parcel post by air on a zone and weight rate basis.

The American Association of Airport Executives is making a determined fight to obtain Budget Bureau and Congressional approval for CAA's request for a supplemental appropriation for \$1,500,000 to June 30, 1946 to enable the continued operation of 90 Air Traffic Control Towers under CAA personnel. These operations have been financed previously by the Armed forces, which will withdraw financial support after Jan. 1.

As this was written, House and Senate conferees were in session on the amended GI Bill of Rights, one provision of which will enable veterans to take short, intensified courses such as certain aeronautical and flight schools have to offer. Instead of requiring the expenditure of the \$500 tuition fee over the period of an average school year of 30 weeks, the money can be spent over a shorter period of time if the Administrator of Veterans Affairs is satisfied that the cost of the course is reasonable and fair.

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YOU CAN SOLO IN A FEW HOURS IN A PIPER CUB. IT IS IDEAL FOR TRAINING. IN FACT, SCORES OF LOCAL ARMY PILOTS WON THEIR WINGS IN CUBS AT MY AIRPORT!

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THAT'S GOOD NEWS TO ME. HOW ABOUT SERVICE?

PIPER CUBS REQUIRE VERY LITTLE SERVICE. HOWEVER, IT IS ALWAYS REASSURING TO KNOW THAT THERE'S A PIPER CUB SALES AND SERVICE ORGANIZATION AT NEARLY EVERY AIRPORT.

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PIPER AIRCRAFT CORPORATION
LOCK HAVEN, PENNA.

In Canada—Cub Aircraft Ltd. Hamilton

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Points the Way to Wings for ALL Americans

New Auxiliary Power Glider Passes Flight Tests

Cruises at 75 mph; Has Four Cylinder Engine

By FRED S. HUNTER

ANNOUNCEMENT of the successful test flights of a new auxiliary power glider was made last fortnight by William Hawley Bowlus, pioneer glider pilot and designer.

Built by the Nelson Aircraft Corp., San Fernando, Calif., of which Ted Nelson is president and Bowlus vice president, the two-passenger glider is equipped with a four-cylinder opposed, two cycle engine developing 16 horse power at 3,500 revolutions per minute.

Fed by a three-gallon gas tank, the pusher-type engine powered glider will cruise at 75 miles per hour and has an hour and a half of fuel capacity at full throttle. On takeoff it will climb at 300 feet a minute to an altitude suitable for soaring.

A strut braced high wing monoplane with dual controls, the new glider has a 47 foot wing span and a wing area of 168 square feet. Its overall length is 23 feet, height five feet, weight (empty) 465 pounds, with 350 pounds allowed for two passengers. Horizontal tail surfaces are 16 square feet, vertical tail surfaces 12 feet.

One of its design characteristics is the conventional single boom tail which supports the tail surfaces. Except for this boom, which is of hollow dural, the glider is made entirely of plywood, with a molded shell for the pilots' nacelle. This nacelle is enclosed with a plexiglass bubble for visibility.

Has Tricycle Gear

The craft has a fully retractable tricycle landing gear, operated manually by the pilot. The nose wheel is steerable with miniature shimmy dampeners.

The prototype was flown with a wood propeller, but Bowlus said this would be replaced with an adjustable pitch prop. Provided on the front end is a glider hook which can be used for towing if desired.

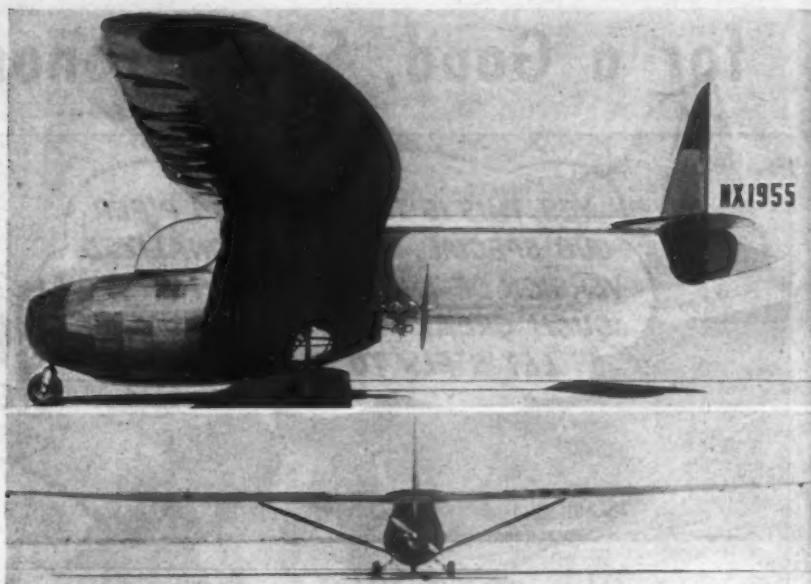
Cockpit equipment includes a conventional throttle, choke, mixture controls, altimeter, and airspeed and sensitive rate of climb indicators. There is also a magneto ignition with impulse starter and a ratchet wire starter mounted on the crank shaft enabling either pilot in the cockpit to start and stop the engine.

In addition to its use on takeoff, thus eliminating the need for tow car or plane, the engine can be started aloft at will when thermal activity is at a minimum, when the pilot has soared too far from home base or when he comes in for a landing, Bowlus said.

Bowlus said the "Bumblebee," as it has been dubbed, will be put into production in kit, semi-finished and finished form as soon as it is approved by the Civil Aeronautics Board.

Bowlus said he believed in kit form the glider will sell at "well under \$1,000."

The Nelson Aircraft Corporation was formed last July by Bowlus and Ted Nelson, who is president of the Nelson Specialty Welding Equipment Company,



Profile and rear view of Hawley Bowlus' new auxiliary power glider.

manufacturers of stud welders he invented, at San Leandro, Calif. The flight tests of the prototype were made at Rosamund Dry Lake.

New Version of 'Skyfarer' Announced by Manufacturer

Tennessee Aircraft, Inc., Skyfarer Division of General Aircraft Corp., announces a new version of the Skyfarer, two-place, allmetal, two-control light-plane. Deliveries, price and performance data, the announcement said, will be released early in 1946 after nationwide distributing and servicing organization programs have been completed. Other products planned by the company include an all-aluminum 14-ft. sports boat, a dynamically styled children's scooter, and an aluminum alloy leaf rake.

Lightplane Tour to Florida Scheduled to be Revived

The Annual Light Airplane Tour to Florida, sponsored by the Gulf Oil Companies and with 11 participating plane manufacturers, will be revived this winter. Open to light craft with engines of 125 hp or less, the tour will begin Dec. 20 and end Jan. 20. Free gasoline and oil at more than 50 specified airports on routes to Florida and back will be furnished by Gulf.

Invitations to participate are being issued to light craft owners by the participating manufacturers. These include: Aeronca, Globe, Luscombe, Piper, Taylorcraft, Stinson, Engineering & Research Corp., Culver, Commonwealth, Funk, and Harlow. Based on 1941 participation when 1400 made the tour, at least 1200 craft, from all States east of the Rockies, are expected to take part in this fifth such aircade since 1937.

Buroker-Hicks Flying Service Dissolved in Northwest Area

Gwin Hicks and H. A. Buroker, partners in fixed-base operations for the past seven years, have dissolved the partnership doing business as Buroker-Hicks Flying Service. The firm dealt in general aircraft business and during the war period was an Army contract Flight School conducting operations at Olympia, Washington; Burley and Coeur d'Alene, Idaho. Gwin Hicks sold his interest to Buroker who will continue operations under another firm name with M. V. Sparlin, formerly of Portland, Oregon.

Hicks for the past six months has been associated with Bert Zimmerly operator of Idaho's Zimmerly Airline, and is public relations director for Empire Airlines, Inc.

Expects Lower Insurance Rates for Private Flying

"Aircraft liability insurance rates for private and pleasure flying will be reduced by as much as 50%," according to G. L. Lloyd, general manager of Aero Insurance Underwriters.

"In our judgment the number of aircraft in non-scheduled operations next year should be at least double the number this year. This justifies the assumption that the future will bring a substantial increase in the volume of premium. If so, a very important factor in keeping up the cost of liability insurance will be removed and rates can be radically modified. We are now promulgating an entirely new schedule of liability rates which will lower the cost of this important protection by as much as 50% in some cases and will bring it within the financial reach of every aircraft owner."



"SUCCESSFUL PICK-UP OPERATIONS," states All American Aviation Corporation, "frequently mean flying at altitude and visibility minimums which actually represent instrument conditions. Minimum interruption of service plays an important part in Pick-Up operations as well as other types of airline operations." ... Building a record of 92% completed schedules through some of the most treacherous flying country in the United States, blazing the trail for other Pick-Up operations, All American Aviation has relied many times on the complete high quality instrumentation of their Pick-Up planes to bring pilot, cargo and ship through safely. Kollsman accuracy and dependability can be one of your greatest assets, too. Be sure to write for the Kollsman Aircraft Instruments catalog. It is packed with facts and specifications to help you select the instruments to provide safe, all-around-the-calendar flight. Address: Kollsman Instrument Division, Square D Company, 80-08 45th Avenue, Elmhurst, New York.

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P. O. BOX 391, BURBANK, CALIFORNIA

September 26, 1945

Major C. C. Moseley
Grand Central Airport Company
Grand Central Airport
Glendale, California

Dear Sir:

I wish to take this opportunity to advise you of a circumstance which, in my opinion, is remarkable.

The last airplane which was reconverted for Western by Grand Central Airport Company was pushed out of the hangar about 10:00 o'clock in the morning and was placed in scheduled service with passengers, mail, and express in the middle of the afternoon of the same day. This particular aircraft had an hour and one-half of flight test after major overhaul and conversion from Army type C-53 to DC-3. This involved substantial structural repairs, skin repairs, revision of floor beams, and many other major items including complete airline radio installation.

Your supervisors and other personnel should be commended very highly for the meticulous quality of their workmanship.

We have expectations of being allocated several C-53's for re-conversion and you can rest assured that the work will be performed by your splendid organization.

Very truly yours,

Charlie N. James
Charlie N. James
Vice President-Operations



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LOCKHEEDS for the U. S. Navy and private owners....We are also in the fortunate position of having a large group of highly skilled personnel, many with 10 to 28 years' experience in aviation. Many of these men have been with this company more than 10 years....**WE HAVE THE EXPERIENCE...THERE IS NO SUBSTITUTE FOR IT**....Send your work here if you want the best at reasonable cost.

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Our Policy... **PRECAUTION...PRECISION...SAFETY**

Americans Take Over Great Tempelhof Airport

**Very Impressive, But
Has Limited Approaches**

By W. W. P.

BERLIN—When Berlin was carved up among the four powers, the United States got a real plum. Germany's great airport, Tempelhof, showed up in the American sector. It is a real asset providing the Americans can restore it to its former glory and enlarge and improve it to meet postwar flying standards.

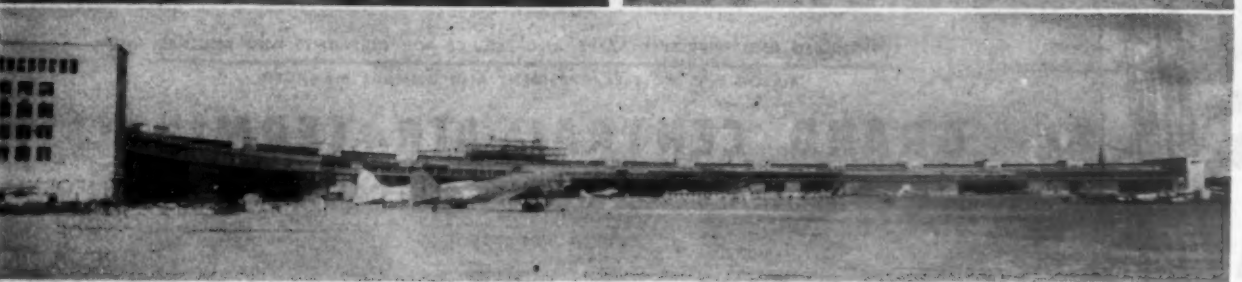
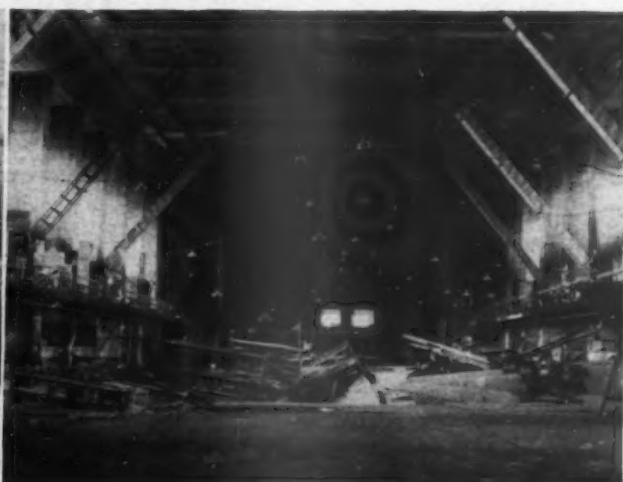
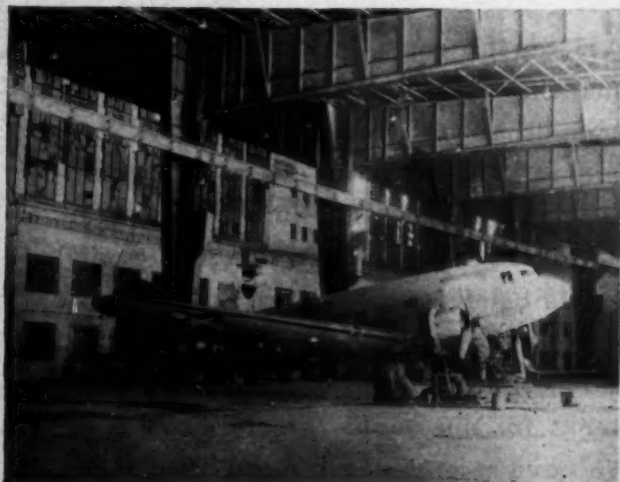
No airport in the world was graced with such a vast aggregation of buildings and hangars as this airport built within the city a few minutes from the center of Berlin. The hangars stretching out in

a semicircle are truly impressive. The huge passenger terminal was also one of the great sights of aviation and the many buildings which go with the airport come close to equalling the Pentagon in actual floor area. One building alone has about 3,000 rooms. Tempelhof was the pride of German aviation and here was centered the core of the meteorological and other operating organizations. It was the home of the widespread Deutsch Lufthansa airline system. Had Germany won the war, it would have been a world center of the greatest importance.

But like all airports built within a city, the approaches are limited. It is not an airport designed for C-54s, B-29s and the like. There are apartment houses

on several sides and the airport buildings themselves effectively blanket another side. The field is sod, like most European airports, but there are extensive taxi-strips and warmup aprons. The Germans never used runways, preferring to fly directly into the wind regardless of direction and they never had heavy-gross aircraft. Most German transports were JU-52s.

Yet the Americans can make a show place out of Tempelhof and apparently intend to do so although there are no directives and no plans as yet. By tearing down a few apartment houses and other obstructions, the present 4800-foot runway can be extended and provided with suitable approaches.



Closeup of the hangar interior at Tempelhof is shown in the upper left photo. Note heavy construction and overhead rail. At right is the war-damaged passenger terminal, used by the Germans in later stages of the war for aircraft assembly. Center left photo shows the "drive-in" for C-47s and C-54s at Tempelhof. Note debris. Photo at center right shows two C-54s in the "drive in." Tempelhof's principal buildings as pictured in the bottom photo, which does not give a good impression of damage done to the structures.

Official ATC Photo, 3414th AAFSB, European Division



The PV-3 10-passenger transport helicopter developed by the PV Engineering Forum, Sharon Hill, Pa. Power by Continental.

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Power by Continental

It may seem a far cry from war tank to peacetime transport helicopter, but that's a transition that Continental air-cooled engines have made. This adaptation involves special cooling technique developed by Continental research engineers and proved in many thousands of light and medium tanks.

It is typical of numerous Continental applications now translating war experience into reliable low-cost power for the nation's peacetime needs.

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POWER BY

**Red Seal
Engines
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When the Americans moved into Tempelhof early in July they found a colossal mess. The field itself was filled with craters. The hangars and buildings had been gutted by fire and damaged by bombing. Debris was everywhere. But today the airport is fairly presentable, and remarkably enough, the basic structural damages to the hangars are few. Most of them are available for use.

Even in a damaged state, Tempelhof makes Chicago's terminal look like a peanut stand. One portion very badly damaged, however, is the huge central passenger waiting room which had been used as an aircraft assembly plant during the war. The floor has caved in, debris is everywhere and fire destroyed anything useful.

Typical of what is likely to happen in wartime, Army engineers moved in during July and laid down a 4800-foot steel plank runway. As such, it is in exceptionally good condition. But whoever laid it out had no knowledge of aviation, for there are obstructions at each end. A difference of a few degrees would have avoided this boner. So any permanent improvement will have to involve relocating the runway. The radio range station is likewise temporary.

Ignorance Is Colossal

One is quite amazed to find that no one who works at the airport knows anything about it. The ignorance is colossal. One ATC captain who has been stationed and living at the airport since July didn't even know where the prewar passenger terminal was. No one has information about hangar sizes or other data. As for a permanent plan for improvement, it simply doesn't exist.

During the summer, however, some officer had the bright idea of taking down the damaged hangar doors in front of the two hangars and making the hangars into a "drive-in" terminal. It was a smart idea. Today C-54s and C-47s taxi right in under the huge steel canopy for loading and unloading, a convenience for refueling and passengers that might well be copied in the U. S. The area under canopy is big enough to accommodate three or four C-54s without crowding. And out of some of the office wreckage, a very adequate and neat passenger terminal has been constructed.

Currently the big airport is being run by rank amateurs who ought to be shipped back to the States and replaced by competent personnel. Not only are they inexperienced in aviation and airline matters, but they are arrogant, petty, childish and underdone youngsters who comprise an outstanding disgrace for the American Army in Berlin. What they have cost the Treasury by closing the airport under almost ideal weather conditions is hard to estimate but when an army major sends a 10,000-hour airline pilot back 250 miles and holds him there for four days by keeping the airport "closed," it's time to clean house and ship the numbskull back home. "Imagine that colonel trying to pull his rank on me. I'll fix him," was the comment by the officer on the ground—and that's the childish way in which America's newly-found prize, Tempelhof, is being operated today.

The United States can make a show place out of Tempelhof, but proper direction is needed from Washington. Competent personnel must be provided not

Expandable Air Terminal Unit Perfected by Detroit Firm

Nine Essential Features Are Contained in 'Design Pattern'

MANY leaders in the field of aviation believe that a Detroit engineering firm has found the long sought answer as to how to construct a terminal building so that in five or 10 years its size and appointments may be increased many times without destroying the original unit.

The plan was developed by Leigh C. Fisher, head of the Management and Revenue Section of Giffels & Vallet's Airport Division, Detroit, after he had completed a series of studies of airport terminal designed recommended by the American Association of Airport Executives. It has been widely acclaimed by practically all segments of the air transport industry, including managers of small as well as large airports.

Basically the plan provides for a group of elements that are arranged in a form suitable to each individual airport's requirements. These elements are such that any addition of repeated elements can be made without changing the original structure. Use of non-bearing walls makes it possible to enlarge the building to relatively unlimited size and yet each element in the original building—from kitchens to rest rooms—are designed as to fit, without change, into the needs of a larger building.

A method of terminal design such as this provides for 100% salvage of any structure erected within this pattern. Fisher asserts. Communities no longer need construct temporary buildings since this "design pattern" provides the ability to expand and re-use the building already constructed.

only for directing the reconstruction and enlargement, but for operations. Probably never in the history of operations has such a sloppy operation been known, with EATS (European Air Transport Service) providing its undisciplined and inexperienced contribution to the confusion. Even ATC seems to fall down sadly at Berlin in contrast to its very high record over the world.

One hopeful sign has been the arrival in Berlin of Fred Grieme, airport-wise and experienced CAA official who is adviser to Major Robert W. Harper, director of the armed forces division of the Group Control Council. Grieme may be able to bring order out of chaos but, like other of General Harper's capable staff, he is only an adviser.

CAA probably has lagged inexcusably also. The Army requested CAA's help months ago. CAA was slow to respond. Meanwhile the deterioration set in. Tempelhof is an asset but it needs some brains comparable to its own stature as an outstanding airport of the world.

The long-standing controversy between unit terminal and central terminal proponents also is solved by this compromise design because it is capable of treatment as a unit or central structure and can

be changed from the one type to the other whenever a decision of that nature is made. It is this remarkable degree of flexibility that has appealed to airport and airline men from the time the plan was first explained. Another remarkable feature is that on the average a 75% space utilization is achieved—a ratio believed to be much higher than the percentage attained in the conventional type of airport terminal. Giffels & Vallet, using the new design, are now preparing plans for the Toledo airport and M. W. Cochran, Chief Engineer of the Detroit firm's airport division, states that an 85% utilization factor will be attained in the Toledo terminal building.

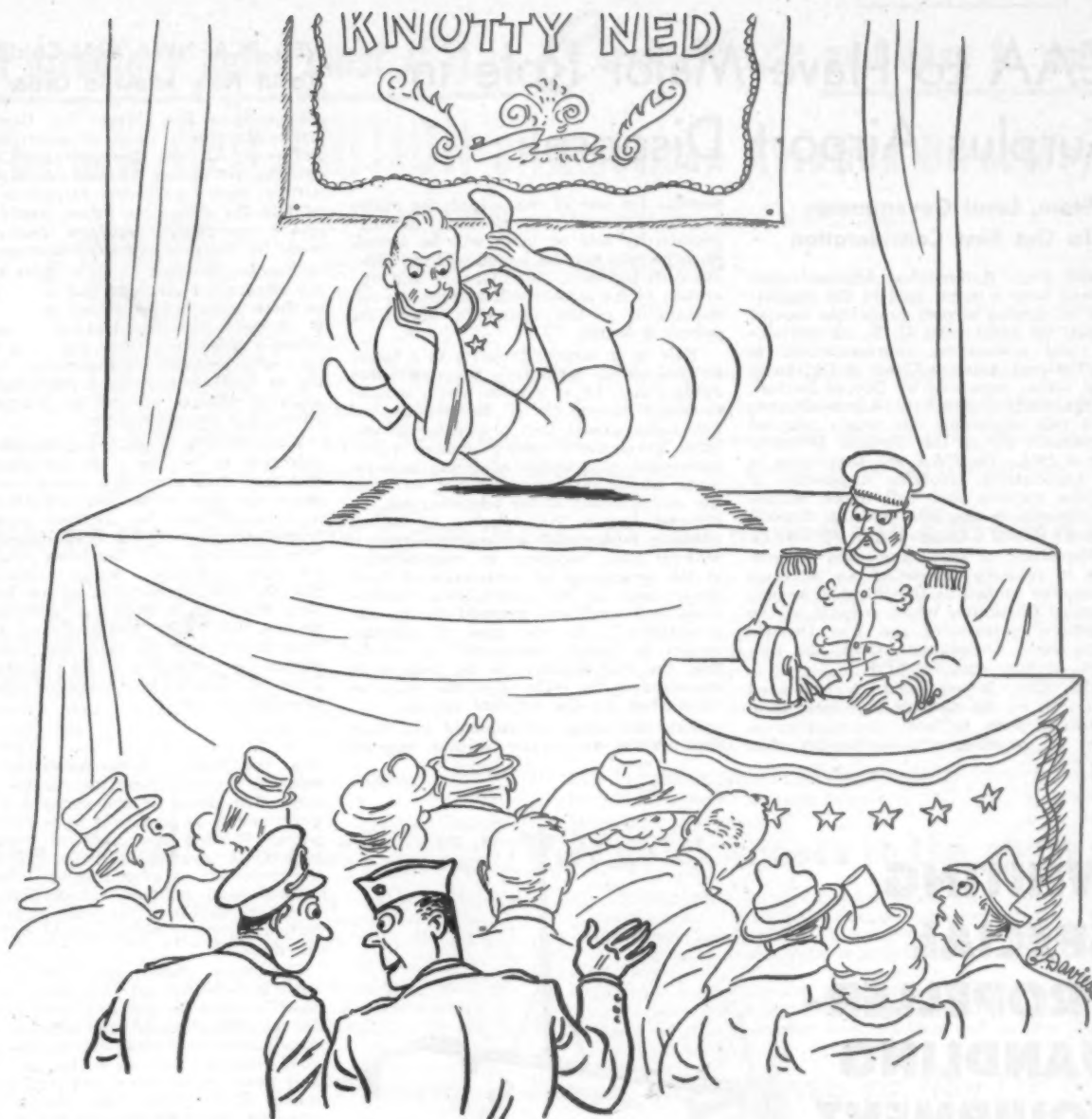
Both Fisher and Cochran emphasize the importance of this utilization factor because of its affect on terminal building revenues. It makes possible larger and more types of concession services which in turn means more revenue and receipts. They firmly believe that their design, based on traffic flow and economic studies, assures a community that its airport will pay out.

Improves Financing

Because airport revenue earning experience has been generally bad, wide spread use of the theory behind the Giffels & Vallet design may change entirely the future financing of airport construction. Instead of bond issues requiring public approval, it appears that where States have the necessary enabling laws, the construction of terminal buildings may be accomplished through the medium of revenue bonds. Large investment houses are showing an interest in airport terminal building financing because of the indicated growth of air transportation.

The Detroit firm has listed nine essential features from which stem the "design pattern." Some of them sound contradictory in their nature but Fisher asserts that all elements can be worked harmoniously into one terminal building. The nine points stressed concerning the "design pattern" are as follows:

1. It permits independent expansion for each tenant, lessee and concessionaire without redesign or remodeling of the building or undue disruption of services already operating.
2. It offers each airline the ability to use its preferred operating methods.
3. It provides maximum uninterrupted traffic flow without annoying and expensive bottlenecks. It segregates passengers and public wherever necessary.
4. It is capable of unlimited expansion without change in basic structure.
5. It is flexible and will minimize obsolescence.
6. It gives a high degree of space utilization and increased ratio of revenue to capital investment.
7. It permits a combination of unit terminal and central terminal operation, while maintaining a functional relationship with the over-all terminal development.
8. It provides a concession area, visible and accessible to public and passengers, and desirable from the standpoint of concessionaires.
9. It gives economy and practicability in construction, operation and maintenance.



“ He got his training in a ball turret! ”

Never before in the history of flying have so many American men and women been trained to build, fly and maintain aircraft. Even discounting those who will move to other occupations during the reconversion period, we have manpower to remain secure in the air, both from a military and a commercial standpoint.

However, other nations also have great air fleets and trained personnel. The question of who will carry the world's air commerce is likely to be the subject of international bargaining for many years to come. The nation which consistently produces planes that can be operated at a lower cost will have an "edge" in such bargaining.

In developing post-war commercial aircraft, American manufacturers will enjoy one important advantage over foreign competition. The United States today can produce more high-

octane gasoline than any other nation. We have the crude oil, the refining capacity, and facilities for producing large quantities of Ethyl antiknock fluid. Commercial quantities of better-than-100-octane gasoline could readily be produced.

By developing engines to fully utilize this superior gasoline, American aviation people can give U.S. commercial planes superior performance and economy . . . important factors in the final determination of who shall eventually have the upper hand in peaceful competition.

Ethyl Corporation

CHRYSLER BUILDING, NEW YORK CITY
Manufacturers of Ethyl fluid, used by oil companies to improve the antiknock quality of aviation and motor gasolines.



CAA to Have Major Role in Surplus Airport Disposal

State, Local Governments To Get First Consideration

THE Civil Aeronautics Administration will have a major part in the disposition of surplus airport properties located within the continental U. S., its territories, and possessions, representatives to the National Aviation Clinic at Oklahoma City, Okla., were told by George Borsari, of the Surplus Property Administration, in a talk explaining the newly adopted Regulation 16 of the Surplus Property Act of 1944. The CAA will participate in all negotiations involving disposition of surplus airports and will make recommendations to the SPA and its disposal agency, the RFC, according to Section 11.

Disposition of such properties is subject to primary review of an advisory committee known as the Surplus Airport Disposal Committee which consists of five members representing the War Department, Navy Department, CAA, the disposal agency, and the SPA.

The SPA, Borsari said, is convinced that it is in the nation's best interest to return airports to local communities as soon as possible. To accomplish this,

permits for use of the airport by states or local governments pending its disposition by sale or lease will be issued. Such permits may be issued with or without cash payment. Maintenance and operation of the airport will become the responsibility of the agency to whom the permit is issued.

"Sale of an airport property to a buyer entitled to a priority," the regulation reads, "shall be at a price which is substantially the same as the estimate of fair value except that a transfer to another government agency without reimbursement or transfer of funds may be made where authorized by law, or upon the authorization of the administrator the disposal agency shall dispose of airport property to any state or local government without cash payment in consideration of the acceptance by such state or local government of all reservations, restrictions, and conditions imposed by the administrator." In the case of airports sought by buyers not entitled to priorities, the consideration to be paid is to approximate the estimate of fair value as established by the disposal agency.

State and local governments will have first chance to acquire surplus airports

NEA, PCA, NWA, NAL Complain About New Idlewild Order

Complaints that Mayor La Guardia's order directing a shift of activities for Northeast Airlines, Pennsylvania-Central Airlines, Northwest Airlines and National Airlines from La Guardia Airport to Idlewild in the very near future would pose severe operational problems have been made by the four carriers concerned.

"Pushing the four of us in there before the airport is ready will put us back two or three years in operations," said William B. Briggs, vice president of Northeast. Idlewild will have three runways ready for traffic sometime in December. Lighting at night will be by a stand-by unit initially. There will be no hangar facilities for several months.

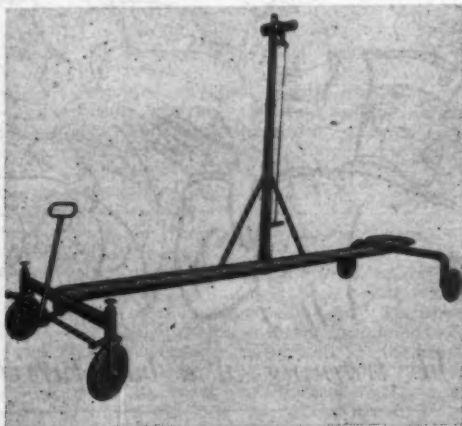
While Northwest, PCA and National are objecting to the move on the argument that their mail revenue is endangered because the Post Office has indicated that mail would not be shuttled from La Guardia to Idlewild but would be put on "the first ship out," Northeast might be hit most critically. Briggs pointed out that his line's competitors on the Boston-New York route, American Airlines and Eastern Air Lines, would occupy a favored position in the mail and passenger picture by remaining at La Guardia, almost an hour's less traveling distance from New York.

after the Federal Government has indicated it has no further use for the property. The desire of the states and local governments to acquire is to be expressed within 30 days after date of receipt of notices of availability. The SPA has the discretion of extending this time. If several local political sub-divisions express an interest in the same airport, the Surplus Property Administrator will make the decision.

Conditions placed upon the state or local government are that the properties shall be used for public airport purposes on reasonable terms and without unjust discrimination; it shall be maintained in good condition, and in so far as reasonably possible, the states and local governments shall protect the airport's approaches from obstructions which would prove hazardous to aircraft using the airport.

To expedite return of airports which are leased in their entirety to the government, authority is granted to the using agency in Section 9 of the regulation to take the necessary step to cancel leases subject to approval of the Committee. No lease, however, shall be cancelled by the using agency if any portion of the site is government-owned. Here, lease cancellations are affected through the disposal agency. Included among certain rights to be retained by the government, according to Section 10, is the right of the government at all times to use the airport in common with others if such use does not interfere with use by other authorized aircraft as determined by the CAA. Such governmental use will be limited to not more than 25% the capacity of the field. The government will pay for any damage to the airport it causes. Re-assumption of full use of the airport during national emergencies is provided for.

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Harvard Study Suggests Joint Airport Terminal Management

Nation-Wide Corporation Would Operate Facilities

A PLAN of action to solve the "airport dilemma which is now created by illogically divided responsibilities, inverted incentives, and restricted management" was presented to the National Aviation Clinic meeting at Oklahoma City, by Lynn L. Bollinger for the Harvard University Graduate School of Business Administration which has been undertaking an intensive research on problems of airport management and financing.

Clinic representatives were asked to consider a joint terminal management corporation owned by the air carriers collectively which could assume full financial responsibility for the air carriers' share of airport charges and which might take from the community's shoulders the task of managing the terminal building, its adjacent area, and the related functions. Airport management is not necessarily a single function, it was noted. The field operating function, concerned with the supervision and maintenance of runways, field area, lighting, etc., could continue to be under the aegis of the city or other public body owning the airport who would provide a field manager.

The nationwide service corporation proposed to handle business management functions of air terminals would operate on an essentially non-profit basis, charging the aviation users of each terminal only enough to cover costs. In seeking the advantages of a single top service organization, the corporation should still permit decentralized operations with the maximum responsibility possible left to the individual terminal managers.

Such a corporation could serve as a joint financial agent to make possible one carefully worked out contract guaranteeing a fair annual payment to the city to cover its costs on all publicly-owned terminal area facilities, including interest and amortization, and also specifying the airline share of landing area costs based on proportional utilization.

An additional service the corporation could render the community might be assistance in financing terminal facilities,

it was suggested. The corporation might also make available a jointly used hangar at some locations. As a financially interested party, it might provide public officials with counsel on matters of further public investment, could take an active part in assuring local transportation services to and from the terminal, and might also play an active role in providing other interdependent services such as those of joint air-freight warehouses, commercial display rooms and airport hotel facilities.

Certain duplicating non-competitive operations now conducted by individual airlines could be eliminated with provision of joint services such as ramp operations, aircraft air-conditioning, gasoline handling, meteorologists, flight crew quarters, etc.

While the Harvard Graduate School has not completed its airport research project, and it was conceded that the plan offered might not be the best answer, Bollinger expressed belief that some radical improvement in current practices is called for to prevent facing of communities with unnecessarily protracted airport deficits and the "saddling of the flying public with excessively high air transportation costs."

CAA-Airlines Still At Odds Over Instrument Approach System

The battle between the airlines and the Civil Aeronautics Administration over the use of the Army-Navy ADF localizer system for instrument approach and landing procedures has not been ended by the CAA's agreement to procure localizer transmitters from the Army and Navy and install them at 12 major airports, according to informed sources. Instead the scene of battle has just been shifted slightly.

The present cause of conflict is over the location of the outer transmitter or localizer. Airline men want this close in to the field, and on the range leg. The CAA, however, plans to locate them on fan marker sites which are 12 miles out and off the range leg, giving as its

Frankfort Gets Big 'Port

The big Rhine-Main Airport south of Frankfurt, Germany, has been designated as the international airport for Frankfurt. There are no buildings on the airport now but plans call for their construction and use of the field by March or April. At present ATC is using the airport at Hanau, about 20 miles east of Frankfurt, and other AAF units are using the airport within the city limits. Rhine-Main Airport is far superior in regard to runways, approaches, etc., and was built by the Germans before the war for military purposes.

reason real estate problems and the difficulty in getting transmitter sites with electrical and plumbing facilities for the close in location.

In the meantime, the traffic situation is becoming more and more serious, and airline officials are greatly concerned over the prospects next year when more equipment becomes available and new schedules and extra sections are added to the present loads. One executive with a major line pointed out that the present load is already greater than the capacity of present facilities for handling it. At La Guardia Field, he said, commercial airlines alone average 16 schedules an hour over the entire 24 with no allowance for bunching, extra sections, and itinerant and military traffic.

In Fort Worth and Dallas the situation is even worse, he added, with the CAA reporting three times as many instrument landings as at New York or Chicago.

Still another serious problem, according to the airline men, is the consolidated clearance procedure recently adopted by Air Traffic Control, under which an aircraft is cleared from Los Angeles to New York, without the notification of intermediate points. The use of this system in connection with ground instead of cockpit weather reports, they say, may result in an aircraft cleared at a specific altitude and assuming he is protected at that altitude actually being removed from the board and having no protection at all.

Hawthorne Field Becomes Commercial Aircraft Center

Reconversion of Hawthorne Field, Orangeburg, S. C., last civilian school to train aviation cadets under AAF supervision, into a commercial aircraft sales and repair center has been announced by Beverly E. Howard, president of Hawthorne Flying Service.

Arrangements for use of flight line buildings were completed following negotiations with the Reconstruction Finance Corp., owners of the field and facilities. These facilities include two large steel hangars, a three-story operations building, the pilots building, and use of the flight line and Hawthorne Field, whose longest runway is just short of a mile in length.

Sam R. Monschke, former CAA maintenance supervisor and in charge of maintenance of Hawthorne Field's fleet of more than 100 Boeing PT-13s during the war, will supervise repair facilities.

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ATSC Reveals Details of P-82 Twin Mustang

**Unique Craft Has Speed
Of 475 mph, Long Range**

DETAILS of the world's first twin-fuselage military aircraft—North American Aviation's P-82 Twin Mustang—finally were revealed last week by the Air Technical Service Command.

A radical departure from the conventional single fuselage airplane, the Twin Mustang is formed by two fuselages joined by the wing and the horizontal stabilizer and at first glance in the air looks like two planes flying in close formation. Carrying a pilot in each fuselage, its primary purpose is to reduce pilot fatigue on ultra long range missions.

The unique ship has a top speed of more than 475 miles an hour, its range, with full armament, is more than 2,500 miles, and it has a ceiling of 45,000 feet.

North American Aviation last fortnight was awarded a contract for a limited number of the world's first twin fuselage military aircraft, the P-82 Twin Mustang. Army officials at Wright Field said it was the first post-war contract for production of a new type military aircraft.

Although the twin-fuselage craft represents a development of North American's P-51, it is described as a completely new plane designed to provide long range without sacrificing speed and altitude or tactical versatility.

Powered by two Packard-built 12-cylinder V-1650 Rolls Royce engines, the Twin Mustang utilizes two opposite-rotating, full-feathering, four-bladed Aero-Products propellers. The power plants are equipped with a two-speed, two-stage, aftercooled supercharger on each engine and water injection.

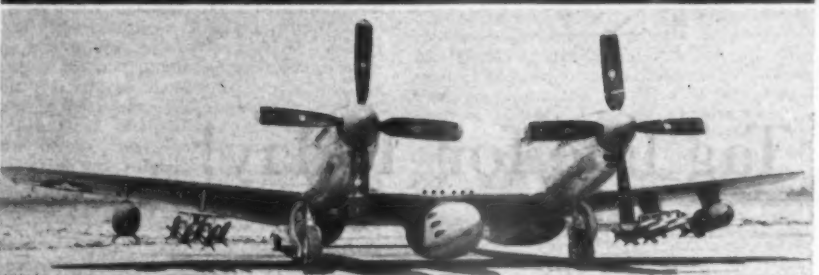
The two fuselages are carried on the center wing section, which is fitted with a single, slotted-type wing flap and with provisions for machine guns and bomb racks. The outer wing sections have removable tips, aileron-type wing flaps and fittings for bomb racks and rocket launchers.

A unique feature of the twin fuselages is the four-wheel landing gear arrangement, consisting of two main gear assemblies and two steerable tail wheels. The main gear is normally operated by hydraulic pressure from the left cockpit only. Emergency operation through a mechanical system is possible from either cockpit.

Each fuselage has a short rear section actually forming a part of the empennage, which consists of two vertical stabilizers and rudder assemblies linked together by a single horizontal stabilizer and elevator assembly.

The elevator and rudder control systems include a hydraulic power boost mechanism which automatically cuts in to assist the pilot in more violent maneuvers and pull-outs.

Each pilot has complete primary and empennage trim tab controls, which the



Here are two views of the P-82 Twin Mustang. Top photo shows the craft in flight and bottom photo shows machine guns, bomb and rocket racks.

aileron trim tab is controlled from the left cockpit only. Complete elevator and rudder control systems in each fuselage are interconnected through the center wing section, as are the complete aileron control systems incorporated in each outer wing panel.

Both engine throttles and both propellers are controllable from either cockpit by manually operated levers. The pilot's cockpit at the left contains the normal flight and engine instruments, including automatic pilot controls, while the copilot on the right has sufficient instruments for relief and emergency operation.

The Twin Mustang's armament consists of six machine guns, 25 rockets and four bombs. Six free-firing .50 caliber machine guns are located in the center section with space for 400 rounds of ammunition for each gun. A compensating gun sight is installed in the left cockpit, and a fixed right-and-bead sight in the right cockpit.

The plane has four bomb racks, one on each outer wing and two on the center wing section, each able to carry a 1,000-pound bomb. Adapters fitted to the center section racks make it possible to carry two 2,000-pound bombs in that position.

To Merge Fields

Expansion of the Army Air Forces' research and technical facilities was foreshadowed when the merger of Wright and Patterson Fields was announced by Maj. Gen. Hugh J. Knerr, chief of the Air Forces Technical Service Command.

One large area, covering 7,507 acres will be known as Wright Field when the consolidation takes place about Jan. 1.

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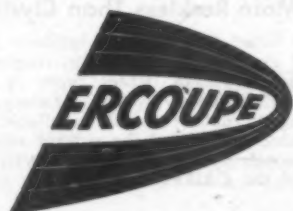
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Pogue Says Civilian Aviation Must Remain Free of Military

IN AN outspoken reply to Gen. H. H. Arnold's recent AAF report, CAB Chairman L. Welch Pogue said last fortnight that U. S. civil aviation "will continue to maintain its excellence if it remains free and not a captive of military principles."

Speaking before the National Aviation Clinic in Oklahoma City, Pogue urged that military air power and civil aviation always be kept separate "in all matters of policy formulation and administration."

(Gen. Arnold, in his third report on the AAF, had asserted that "it is in the national interest for the Air Force to have a voice in civil air matters.")

There appears to be developing, Pogue told the clinic, "a movement to give the military air forces a voice in civil air matters. What does a 'voice in civil air matters' mean? It is not clear what civil air matters may be in mind nor is it clear whether a 'voice' means an advisory or a voting voice."

"Possibly this means a voting voice at governmental level in the determination of all important civil aviation issues such as the location and characteristics of civil airports and landing areas, the development, maintenance and operation of air traffic aids and control systems, the extent, character and location of air routes and services, the volume of air transportation services to be encouraged by the government and the number, type and characteristics of the aircraft (including power plants) to be used in air transportation, the method of organization of our air companies (including questions relating to the number of companies to be permitted to operate domestically and internationally and the degree of competition to be permitted between American companies in different areas) and, in fact, all other important issues in this growing and vitally important field of civil aviation."

"If a 'voice in civil air matters' has this meaning, legislation would be required to make such a program effective because historically the military authorities have

not been authorized to exercise a voting voice in civil aviation matters in America.

"I believe that any such proposal would not be acceptable to the American people and that its adoption would defeat—not advance—the national preparedness which all of us most earnestly desire."

Pogue emphasized that civil aviation will always be available to aid the military but that it will do so as a transportation agency. "Civil aviation is an essential part of military air power only in the same sense as are automobiles, trucks, the railroads, ships that sail the sea, or, let us say, radio communications," he said. "In war everything usable is used."

Offensive flying weapons of the future require a new label—they constitute what might be called "military aeronautics," the CAB chairman said. "I see military air power deriving its striking force from a military aeronautics that will become almost wholly divorced from aviation as we conceive it in its civil aspects and as it existed in World War II. Air power—the striking force of air power—will become a new type of ordnance."

Pogue made it clear that he thought that in its own right "the military will require a larger and larger proportion of aviation transportation as a part of its regular establishment. Furthermore, no one would contend that the military authorities should not be concerned about civil aviation." But, he added, they are also concerned with railroads, radio, automobile industry, etc. They should "always be heard with deep respect in their advisory capacity on broad policy questions concerning all these matters on which our nation must rely for its defense."

On another subject, Pogue said that if "nations should be wise enough voluntarily to organize themselves into a federated world they now have for the first time in history the transportation and communication facilities equal to the task . . . Here, at long last . . . we have the facility, the indispensable means which would be required for any world organization to be a success."

No Chance For Revival Of Jap Air Power Now

Any possible revival of Japanese air power has been nullified by an order from Allied headquarters which abolished all training of pilots, ground crews, designers and specialists in construction, maintenance or operation of aircraft. Private organizations and commercial firms were forbidden possession of any craft or training facilities.

The order affects the Japan Airways Co., Ltd., a \$7,800,000 agency created in 1939 by a government act merging all Japanese aviation companies; the Japan Aviation Association, government-subsidized organization through which the government encouraged air training and made available a pool of young airmen for the military; and two research institutes which provided new models for the government's air force.

AAF Blasted 56 Percent Of Japan's Important Cities

A Post War Army Air Forces survey disclosed last fortnight that American bombers blasted and burned out an average of 56 per cent of Japan's most important 62 cities.

The yeoman's part of this huge task of destruction was accomplished by superfortresses of the 20th Air Force during the 26,620 sorties they made against enemy home islands.

The percentages of destruction of the built-up areas of these cities ranged from 11 for Amagasaki to 99.5 at Toyama. Twelve were more than 75 per cent destroyed and 19 others more than half devastated. The majority were at least one-third destroyed.

AAF To Discharge 4,000 Volunteer Aircrew Trainees

The Army Air Forces will discharge approximately 4,000 aircrew trainees who had volunteered from enlisted status, the War Department announced.

Declaration as surplus of these individuals, who have at least two years service during the period September 16, 1940, to November 9, 1945, is indicated for the following reasons:

1. Most personnel currently being held in the Air Crew Program who volunteered from enlisted status are now Aviation Cadets or Aviation Students. Readjustment and reassignment would be difficult and would require several months.

2. It would be uneconomical to train them in a new skill prior to their becoming eligible for separation under current policies and new overseas screening standards do not permit assignment overseas.

CAB Finds Military Pilots No More Reckless Than Civilian

The belief that returned military pilots would experience difficulty in reorientating themselves to lighter types of civil aircraft has been proved a fallacy, according to data presently available and presented a study of the subject released this month by the accident analysis section of the CAB's safety bureau.

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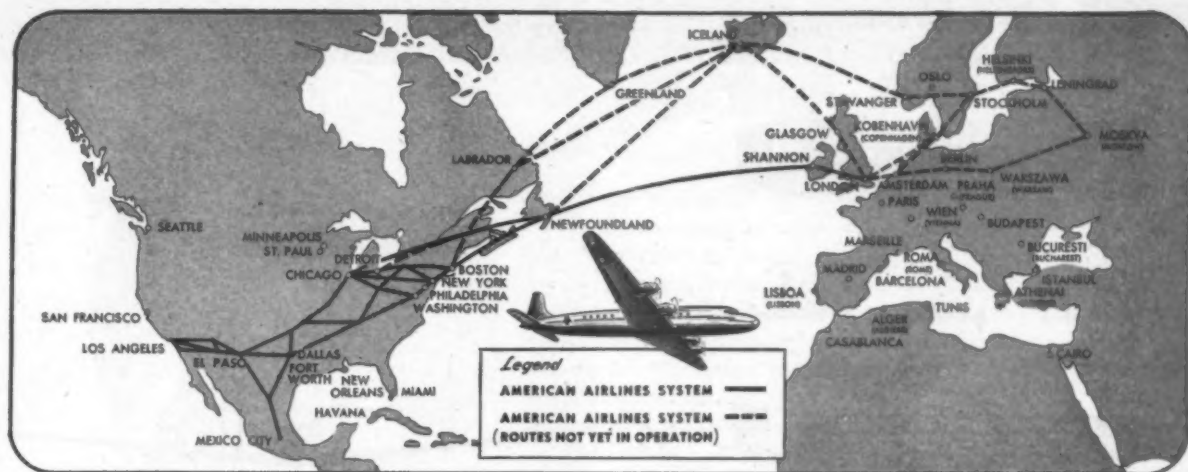
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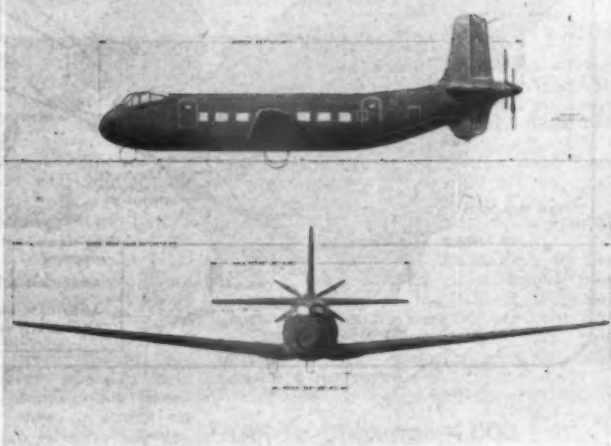
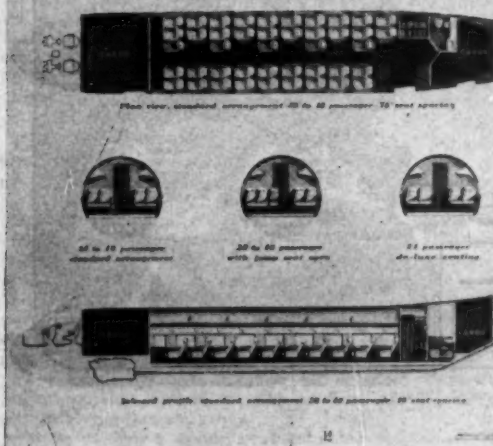
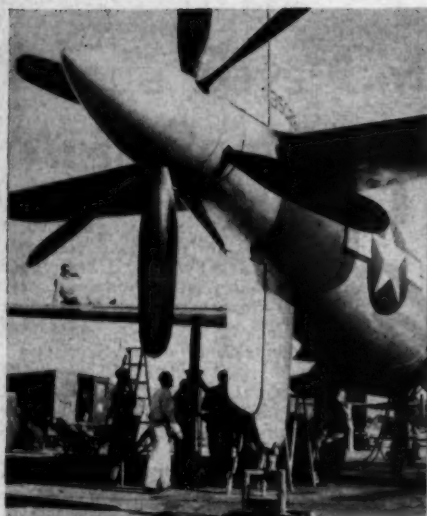
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THE NATIONAL AND INTERNATIONAL ROUTE OF THE FLAGSHIPS



Douglas' XB-42—Top secret for more than two years was the XB-42, the military counterpart of the DC-8. Upper right shows the two rear counter-rotating propellers, while the photo at left shows the aircraft on a take-off. Lower photos show the passenger version of the bomber, designed to carry 48 passengers. The Army said this is its first bomber in the 400 mph class. It is powered with two V-1710 Allison water-cooled engines.

Fifty-Nine B-29s Will Be Salvaged at Three Plants

Fifty-nine B-29s, in varying stages of construction at the termination of hostilities, are at present being salvaged or are scheduled for salvage at three aircraft plants, it was announced by the War Department.

Sixteen of the planes were being built at Boeing Aircraft Company, Wichita, Kansas; 34 at Bell Aircraft Corp., Marietta, Georgia, and nine at Glenn L. Martin Company, Omaha, Nebraska.

Decision to salvage the planes was made when a detailed survey, undertaken in connection with postwar production cut-backs, showed dollar cost of completion would be greater than dollar cost of dismantling. This saving to the Government also would be supplemented by funds from the sale of the salvaged materials. It was then agreed that planes requiring more than 1,000 man-hours work for completion would be salvaged.

B-29 Breaks Record

The world's nonstop flight distance record, a mark of 7,158 miles set in 1938 by British craft, was upped Nov. 20 when a B-29 landed at Washington National Airport after an 8,198 mile flight from Guam. Flying time was 35 hours, five minutes. The craft, carrying a double crew, was stripped of excess weight and slightly modified to streamline it for the flight. Loaded to a gross weight of 141,000 lbs. on departure, it carried 11,110 gals. of gasoline at take-off.

Returns To Post

Col. T. B. Herndon has returned to his prewar position of chief of the Aeronautics Division of the Department of Public Works of Louisiana. He was an officer in the Air Transport Command for three and a half years, during which he commanded and built major U. S. air bases in North Africa.

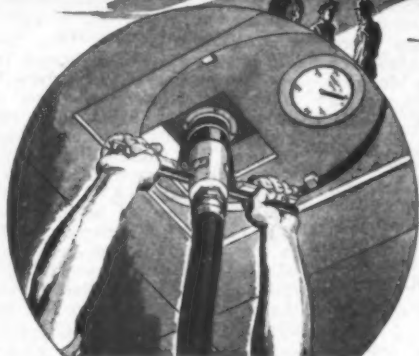
Lovett Resigns Air Post In War Department

President Truman last fortnight accepted the resignation of Robert A. Lovett, Assistant Secretary of War for Air. The resignation will be effective Dec. 8. Lovett's resignation originally was submitted Sept. 6 when the then Secretary Stimson informed Lovett that he was leaving his cabinet post. Mr. Truman said he regretted "exceedingly" Lovett's departure from the government. He congratulated him on the "excellent results" which followed his advocacy of the Development of striking air power in the air.

Under questioning at a press conference, President Truman said that Gen. H. H. Arnold, commander of the AAF, had asked to be relieved of his post, but that his resignation has not yet been accepted.

WHAT THE NEW *Martin 2-0-2* MEANS TO AIRLINE MAINTENANCE MEN

Mareng Fuel Cells: Featured in the new Martin 202 are elastic fuel cells. These Mareng cells, like the bladder of a football, are easily installed or removed . . . may be quickly repaired.



THE ease with which the new Martin model 202 transport can be refueled and serviced means more than shorter stops and faster passenger schedules. It also means a lot of time and trouble saved by those unsung heroes of the air lines, the hard-working maintenance men. Unusual accessibility, rugged long-lasting construction, and emphasis on interchangeability of parts—these features make the Martin 202 the easiest plane of its type to service and maintain. Look at the facts listed below and you'll see why the 202 is the answer to a maintenance man's prayer!

THE GLENN L. MARTIN COMPANY, BALTIMORE 3, MARYLAND

Quick Refueling: To reduce waiting time at airports, the new Martin 202 is designed for under-wing pressure fueling . . . for oil tank servicing from the ground. No climbing on slippery wings in rain or snow.

Martin
AIRCRAFT

Builders of Dependability  Aircraft Since 1909

FACTS FOR MAINTENANCE MEN ABOUT THE NEW MARTIN 2021

- Radio, heating and electrical equipment, as well as control cables and hydraulic lines, all are located in the belly of the fuselage—are accessible through large "bomb-bay" type doors. Equipment is grouped to permit work on separate types with minimum of interference.
- Accessories at rear of engines are accessible from wheel-well through removable panel on fire wall. The 202 also permits under wing pressure fueling—oil tank servicing from ground. Adequate, quick-opening panels permit inspection of vital controls.
- Pilot's and co-pilot's flight group instruments removable as unit through nose wheel-well from back of instrument panel. Three-point suspension tubular engine mount is designed for maximum accessibility to engine.
- Flexible Mareng fuel cells, easily removed, installed or repaired. Cabin furnishings easily removable without tools.
- Special attention given to making all parts interchangeable.

Wherever possible right and left hand parts are identical. Thus, for example, soundproofing consists of identical interchangeable panels, easily removed or installed without tools.

- Power plant mountings are designed for rapid replacement, right and left engines are interchangeable, cowlings are easily removed. Flexible, long-lasting, fireproof tubing for all fuel lines forward of firewall are specified.
- Landing gear consists of dual main wheels which are safer, lighter to handle, easily replaced—and a new style nose wheel which eliminates the complexity of the "duc" sealed-tube type. Convenient jack pads permit easy replacement of wheels and brakes—down-and-up lock arrangement is simplified, reliable.
- These are only a few of the outstanding features of the Martin 202. From stem to stern this plane was designed to meet airline maintenance requirements as determined by long study of airline custom and procedure.

• The Martin 202 is engineered specifically to meet Air Transport Association specifications. Not just designed for the airline but by the airline—custom-built by Martin—to the most exacting standards of the air traveler.

American To Use Two Versions of C-54 Skymaster

Domestic Craft Will Have Seats for 60 Passengers

By SYDNEY CARTER

TWO different conversions of the C-54 Skymaster will be used by the American Airlines System, one for domestic and the other for overseas routes, AA officials revealed last fortnight.

The domestic version, which will be used on long haul transcontinental as well as on short-haul, high-density routes, and which is being converted by Republic Aviation Corp., will provide accommodations for 60 passengers together with 546 cu. ft. of cargo space. The standard overseas version, which is being converted in American's own shops, will seat 34 passengers in addition to providing for mail and cargo.

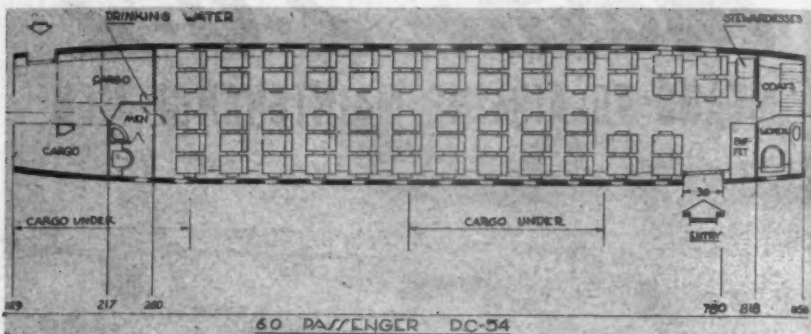
Delivery of the first of the domestic ships is expected sometime in December. Three of the overseas ships are already in operation, but since they are not equipped with dump chutes, they are at present limited to only 18 seats. It is understood, however, that the installation of dump chutes on one aircraft has been completed, and that those on two additional aircraft are nearing completion. As soon as these are ready, they will be substituted for those now in service, with the latter returning to the shops for dump chute installation.

The 38-passenger C-54 which was exhibited recently by American in Washington is actually an overseas conversion. After its completion, however, American decided to remove one row of seats to provide additional cargo and mail space, thus reducing the passenger capacity to 34.

200 Major Changes

Approximately 200 major changes are incorporated in the American domestic DC-4 as compared to the Army C-54 from which it is being converted. These include complete reworking of the instrument panel to a design agreed upon by Pilot, Operations, Maintenance and Engineering personnel, and the re-equipping of all aircraft with new P&W R-2000-13 engines, rated at 1,450 hp each for take-off, 1,200 hp meto, and 800 hp for cruising. These will give the new ships an average cruising true air-speed of 240 mph at 10,000 ft. with an average cruising consumption of 250 gph. Climb time and consumption to reach 10,000 ft. is estimated respectively at 18 min. and 120 gal. with an average true airspeed during this period of 150 mph.

Passenger seats will be of a special AA design, arranged in 10 rows of three seats each followed by two rows of two seats each along the left side of the cabin, and 13 rows of two seats each along the right side of the cabin. Two jump seats for cabin attendants are provided immediately behind the last row on the right hand side. The seats are of reclining type with individual arm rests, ash trays and safety belts. Rows are spaced on 40-in. centers which is 1 in. more than the DC-3, and length of cushion and height of back will conform to present DC-3 standards.



is also possible that a detachable pillow will be included in the upper portion of the set back.

The buffet, located at the rear of the cabin, will have provisions for serving 60 passengers using plasticware and silverware. A casserole type of service which permits the pre-cooking of hot foods in a casserole and placing them in electrically heated and insulated carriers will be used. An electric hot cup will also be provided.

In the extreme rear section of the cabin, directly opposite the ladies' lavatory, will be a coat compartment with provision for 20 garments. This is planned primarily for extra clothing, with the majority of passengers' hats and coats being accommodated in "larger than DC-3 type" overhead hat racks.

Has Two Lavatories

There will be two lavatories, one for men between the cabin and cockpit, and accessible to both, which will be divided into toilet and washroom sections and will accommodate two persons, and one for ladies at the rear of the cabin. An electric shaver outlet will be provided in the ladies' as well as the men's lavatory for possible use on overnight flights when the majority of the passengers aboard are men.

A new type of chemical toilet will be used making it possible to service toilets from outside the aircraft, by means of a special carrier.

Interior finish of the DC-54s will be similar to the latest specifications for the DC-3. Ceiling and wall lining will be doped fabric, with the wall below the windows finished in a plastic that has the appearance and feel of leather, but is more durable. Glass wool soundproofing and insulation will be used.

The entire floor will be covered with special sponge rubber surfaced with polyvinyl chloride, a plastic which can be easily maintained, is extremely durable and will eliminate the need for rugs, unless they are used on the center aisle to absorb moisture carried in by passengers' feet.

Cabin windows will be of the standard C-54 elliptical type, with plastic used instead of glass, and a new type plastic window defroster. Window curtains will operate on one continuous rod from the front to the rear of the cabin.

The main passenger entrance will be 30 in. wide and located aft of the last row of seats on the left side of the fuselage.

Having passengers enter through the forward cargo compartment so that they could bring their own luggage aboard was considered, but was abandoned because it would have required a major change in the aircraft structure to enlarge the door sufficiently.

The aircraft will be heated by a gasoline heater capable of producing 240,000 BTU/hr. Hot air will be introduced through anemostats in the ceiling, and cold air exhausted through vents in the base of the walls. Individual cold air vents will be supplied for each row of seats as in the DC-3. The ship's own heating system can be used for air conditioning on the ground in the winter. In the summer outside refrigeration units will be used as at present, with air conditioning trucks positioned straight into the airplane parallel to the fuselage.

The flight crew will be provided with separate food service equipment serving identical meals to those provided for the passengers, and will have special accommodations for its luggage, coats and hats.

Still another feature will be an automatic installation to raise and lower the company flag.

American's DC-54s will have six cargo compartments with a total volume of 546 cu. ft. and a total capacity of 8,455 lbs. Between the cockpit and the cabin will be a 100 cu. ft., 1,215 lb. forward and 60 cu. ft., 780 lb. rear compartment on the right, and a 45 cu. ft., 1,120 lb. forward and 80 cu. ft., 1,140 lb. rear compartment on the left. All four of these compartments will permit a floor loading up to 100 lbs./sq. ft. In addition there will be a 110 cu. ft., 2,100 lb. forward belly compartment, and a 151 cu. ft., 2,100 lb. rear belly compartment, although the latter will be used infrequently because of balance limitations. Floor loading of the belly compartments will be 30 lbs./sq. ft.

TWA Opens Steward School

The establishment of a Transcontinental and Western Air flight steward school under the direction of Richard Murray, manager, central training, has been announced by Clifford A. Mutchler, director of passenger service. Charles A. Williams, superintendent of TWA's flight service, transcontinental division, is in charge of the new school which has temporary quarters at the municipal auditorium in Kansas City, Mo. Ernest A. Belshaw, supervisor of flight service, international division, is acting director.



... For Progress in Radio

Here are views of the just-completed Collins hangar at the Cedar Rapids Airport, and the company's 18S twin-engined Beechcraft. The installation is dedicated to constant advancement in the design and performance of radio communication and navigation equipment for aviation.

The wing to the right of the hangar contains laboratories for Collins physicists, engineers, technicians and mechanics engaged in specific projects that require much space and the use of the plane.

Customers of Collins equipment are invited to remember that these facilities are available for installation and service. The Cedar Rapids Municipal Airport, with its 5400 ft. runways, will accommodate the largest aircraft. Collins Radio Company, Cedar Rapids, Iowa; 11 West 42nd Street, New York 18, N. Y. In Canada Collins equipment is sold by Collins-Fisher Limited, Montreal.

IN RADIO COMMUNICATIONS, IT'S...



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JET + PROPELLER

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Maneuverability
Speed

THE NEED: A carrier-based combat plane combining the advantages of jet propulsion for peak performance... plus piston-engine and propeller power for short take-off and long range.

THE EXPERTS said "it can't be done." But the Navy and Ryan, working together, tackled the problem and *licked it... in the first design.*

THE RESULT: The most successful application of jet propulsion yet worked out.

- The only jet plane which can operate from aircraft carriers.
- New high performance—superior maneuverability, speed and climb—over widest range of altitudes.
- Best combination of desirable fighter characteristics, each with its relative degree of importance to the others.
- Tremendous emergency power when both engines are used together.
- Advantages of two-engine airplane in single-engine configuration.
- A plane which gives pilot combat advantage at all times.

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U. S. NAVY'S NEW JET PLANE

Michigan Central's Feeder Operation Looks Promising

Vital to Isolated Areas Of State; Wants Big Planes

By WILLIAM L. THOMPSON

MICHIGAN CENTRAL AIRLINES—an intrastate operation between Detroit and Charlevoix, Mich., which for two years has hit the peaks during summertime, only to hit the skids after Labor Day—has taken a sudden turn for the better.



Dort

Since October 5, when the "Pioneer Michigan Airline" announced a streamlined schedule in anticipation of another winter slump, its twin-engined Cessnas have been carrying capacity loads. And its 29-year-old president, David T. Dort, has set his cap for "a couple of Electras, or Beechcrafts, or 247-Ds, or, believe it or not, some DC-3s."

Dort hopes to obtain these planes whether or not he emerges with a certificate from the CAB in the Great Lakes Case, in which he seeks four routes. His local airline really has "caught on." It is as vital to Michigan as peaches, beaches, and cars.

David Dort is one of two sons of the late Dallas Dort, partner of William C. Durant in the "world's largest carriage business" and later founder of Dort Motor Co. He has done a whale of an intrastate air transport job for Michigan's war industries.

It was these industries, notably Dow Chemical Co. of Midland, Mich.—six hours from Detroit by bus, 55 minutes by air—which gave Michigan Central its start. Dort had developed an extensive contract operation for these companies before the war, and when this activity was terminated by wartime regulation each

of the firms petitioned him to start a fixed-route, scheduled intrastate service.

First bottleneck was procurement of suitable aircraft. Dort found it impossible to get twin-engined equipment due to wartime limitations, so he compromised on three 5-place Beechcrafts.

Next was the problem of pilots. Dort was one himself, but his eyes prevented



Michigan Central's operations manager, Leonard Davis, is shown at left with (left to right) Pilot George Lahiff, Pilot Art Thomson, and Chief Pilot George Sherwood.

him from qualifying for a commercial license. So he raided a CPT school at Romulus, Mich., and obtained the release of Leonard Davis, 27, who had logged more than 2,000 hours as an instructor and held a commercial. Davis, now operations manager, flew every flight on Michigan Central's schedule from the day service was inaugurated between Detroit and Bay City in February, 1944 until the following June. It was then that Dort discovered "gold" in the resort business. He promptly added two Stinson Reliants and two pilots—Art Thomson, 30, graduate of the Dallas School of Aeronautics and later an Army primary instructor in Mississippi; and Jack Stokan, 28, CPT in-

structor at Grand Rapids, who had taught instruments.

By last summer, traffic demanded that two more pilots be taken on—George Lahiff, 29, who had been a flight commander at Thunderbird Field; and George Sherwood, 31, engineering test pilot for Consolidated Vultee, who holds an airline certificate. Sherwood is chief pilot of Michigan Central by virtue of this certificate.

At present, the airline operates between Detroit, Flint, Saginaw, Bay City, Midland, Mt. Pleasant, and Cadillac. Charlevoix, formerly on the schedule, was dropped as a regular stop in the recent streamlining, but still is served—on request—by single-engined connecting planes. Michigan Central is unique in that it operates subsidiary flying schools at three points along its route—Flint, Midland, and Charlevoix—and maintains standby commercial pilots and planes at each of these centers.

During its first 11 months in 1944, MC operated around 176,000 passenger miles. The total for the first eight months of 1945 was 275,681 passenger miles. Since the two Cessnas were procured early in September, about 75,000 passenger miles have been flown.

Fares, which averaged 10c a mile during single-engined operations, have been cut to 8½c with the Cessnas, but Dort anticipates a 4½c fare if he is successful in obtaining larger planes. He maintains that his indirect costs, which are 78% of his direct costs, are geared to 15-passenger planes. This low overhead is due to the close-knit character of his organization. Most of his white collar



One of the airline's Cessnas is shown at Cadillac, Mich., airport. The town built a modernistic station (right) largely to serve Michigan Central patrons.



**Need Trained Men Equipped
for LEADERSHIP in
Commercial Transport and
Fixed Base Operations?
—Look to Parks**

In the fields of Aviation Operations Engineering, Aviation Maintenance Engineering, and Aeronautical Engineering, graduates of Parks Air College have advanced to such representative positions as these:

**Meteorologist—Station Manager—
Crew Chief—Flight Engineer—
Assembly Chief—Production Engineer—Group Leader—Liaison Engineer**

Parks trained men have a long, proven record of winning and holding positions such as these in Aviation Operations Engineering, Aviation Maintenance Engineering, and Aeronautical Engineering.

Write or wire Oliver L. Parks, President, for full information about Parks Air College and Parks graduates.

PARKS AIR COLLEGE, INC.
East St. Louis, Illinois



Scene in the airline's Midland, Mich. office. Reservations Clerk Helen Ankrom (center), who was taught to fly by Gerald Martini (right), Michigan Central's station manager and flight instructor at Midland, is looking up a schedule for a patron and her young son.

employees, for instance, are students at flying schools operated by him and are highly enthusiastic over the prospect of being in on the ground floor of a growing transport company. His mechanics, too, are proud of the company's 100% safety record and work hard to maintain it. As an extreme example of efficiency, Dort tells of a periodic inspection job on one of his aircraft at 42c an hour. He believes this same job in any other airline shop would have cost him \$1.25 an hour.

This may suggest poor maintenance, but such is not the case. Michigan Central actually changes oil and checks spark plugs every 25 hours. One Lycoming 260 engine was flown 800 hours without overhaul, maybe because of MC's "protective maintenance system", or maybe because Dort "rides any pilot who abuses an engine."

A factor contributing to the airline's safety record is its system of daily "line sheets." A pilot must check gauges of both engines before each flight to make sure inspection and oil change is not overdue. He must comment liberally on engine, radio, and instrument performance after each flight. All complaints are initialed by the maintenance supervisor on the same sheet after repairs or adjustments have been made. In the event these go unattended, the complaint must be carried forward to the following day's report. As each used sheet is turned in at the end of a day's operation the pilot must list the plane's total flying time on a master sheet together with any comments known only to the pilot.

Who rides Michigan Central? The writer recently took four trips on the airline to study this question first hand. On a trip from Detroit to Cadillac, Lt. and Mrs. R. A. Hancock and their four-year-old daughter, Jo Ann, were aboard. They never could have made it from Washington, D. C. to Cadillac, for a week-end at the home of Mrs. Hancock's folks, if they had been obliged to travel by bus between Detroit and Cadillac. Why travel by bus? Because that is the only modern means of surface transportation in Northern Michigan. Ten percent of the bus passengers up there would ride parlor cars—if they could.

A passenger to Saginaw was Jimmy McGrath, 14, whose mother lives there.

Jimmy goes to school in Detroit and wouldn't be able to see "Mom" week-ends if it weren't for MC. Mrs. C. Gordon Watson flew Detroit-to-Flint in 40 minutes after arriving at Detroit Airport from Minneapolis by Northwest Airlines and learning that, by taxi and bus, Flint was three hours away. She is the wife of a Minneapolis physician.

A regular week-end patron of Michigan Central is Mrs. Thomas Slattery and her son Dean, aged 1½. Mrs. Slattery operates the Royal Hotel in Cadillac while her husband holds down the job of transportation manager at Detroit's Statler Hotel. She and the boy fly to Detroit to be with Mr. Slattery every Sunday. Before MC was formed, they were lucky to see each other every two months.

Operations Manager Davis and Chief Pilot Sherwood, each of whom flew the writer twice, reported these additional sidelights on who rides Michigan Central:

- Folks from Northern Michigan go dancing in Detroit now. They never did before.
- Buyers from upstate department stores fly to Detroit to inspect new merchandise rather than wait for drummers to call on them.
- A small community might have been wiped out had it not been for a timely delivery of serum.
- The manufacturer of a highly specialized product would have gone to the wall if Michigan Central had not provided him with a means of making frequent trips to contact his prospects in Detroit.

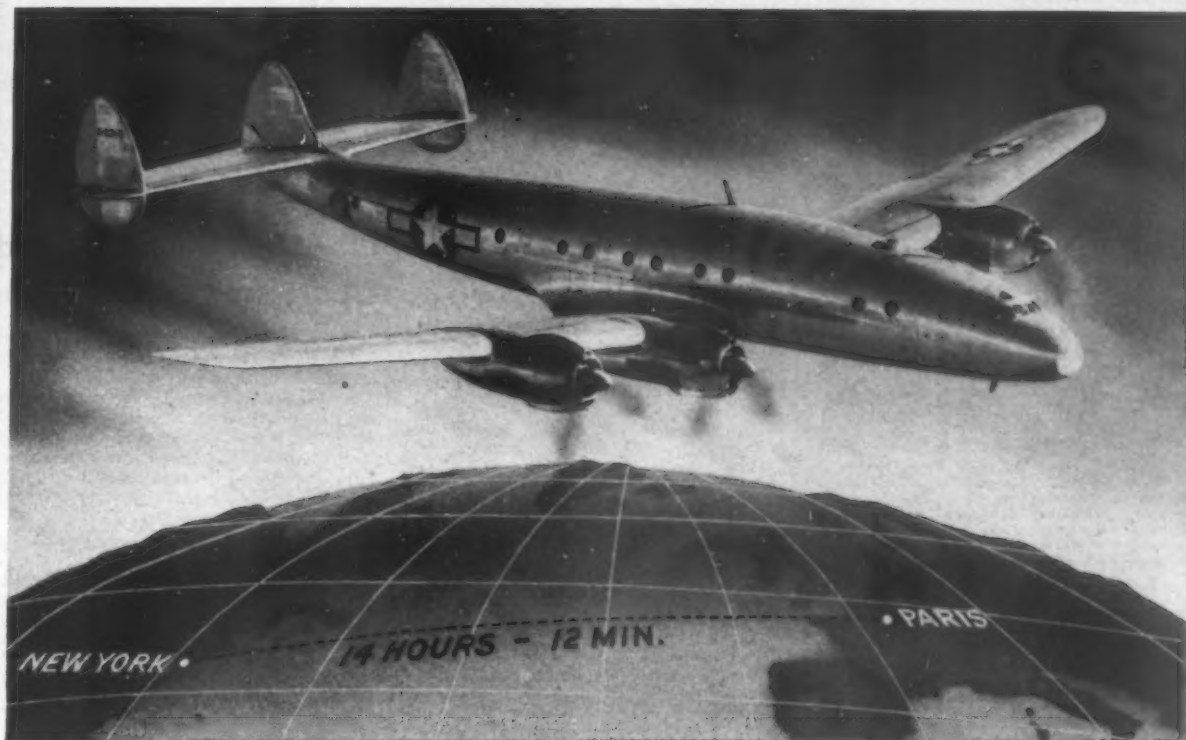
Detroit is the hub of the MC system. Fifty-five per cent of all revenue comes into the airline's modern ticket office at Detroit Airport. Much of this traffic comes from interstate airlines, who are as anxious that their passengers connect with Michigan Central as they are that they connect with the first available taxicab.

It was in an effort to apprise CAB of this situation that Dort filed his application in the Great Lakes Case. While admitting that his company is looking up, he nevertheless believes that local interstate operations cannot be "completely satisfactory" to the operator or to the interstate or foreign travelling public unless interline, joint, and through tariffs be established for the through transportation of passengers, cargo, and mail.



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OCEAN-SHRINKER *-- 45 Tons of Speed*

On May 20, 1927, a young unknown named Charles A. Lindbergh climbed into a tiny monoplane at New York and 33 hours and 30 minutes later landed at Paris, France. Immediately he became a world-wide hero.

But on August 1, 1945, the ATC's C-69 Lockheed "Constellation" made a casual 3,600 mile N. Y. — Paris flight in 14 hours and 12 minutes breaking all trans-Atlantic transport records. Yet: this hardly rated a mention in the newspapers.

The progress of aviation is so swift that new records are made almost daily as new designs and greater power plants step up speed and efficiency. Helping the C-69 to this newest record were four great Wright engines developing 2,200 h.p. each . . . and each is equipped with CECO carburetors.

As new records are broken and greater aviation advances are made, Chandler-Evans will continue to use all its war-proved engineering and production resources to keep pace with America's aircraft engine builders.



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FUEL PUMPS
PROTEK-PLUGS**

CHANDLER-EVANS CORPORATION



**SOUTH MERIDEN
CONNECTICUT, U.S.A.**



TWA 'Connie'— E. Lee Taiman, TWA's senior vice president (right) takes delivery on his company's first Lockheed Constellation from Leonard K. Schwartz, Lockheed sales manager (left). Sen. Pat McCarran of Nevada (center) was present for the ceremony, held at McCarran Field, Las Vegas, Nev.

Air Transport for Every Town Predicted by Pogue

CAB Chairman L. Welch Pogue, addressing the National Association of Commercial Organization Secretaries conference at Columbus, O., last fortnight abandoned his usual wariness of prophecy with the prediction that "some day every town of any size in our country will have air transportation service."

"To save me embarrassment" he told the conference, "you probably should not read this again for 20 or 25 years; but I shall be glad to have you read it at the expiration of that time."

Pogue declared that a major question facing the Board was the determination of "how much government financial support is justified as a matter of national policy in extending air transportation service to light-traffic communities." He added that there would be a lot less eagerness on the part of applicants proposing small local air services "if it were not for the fact that government financial support is available to certificate holders."

Local service, he pointed out, is not necessarily dependent upon the statistical size of a community, but rather upon how much air travel volume the community can develop. He told the conference that U. S. cities and towns "can have as much air service as the taxpayer is willing to pay for," but that the determination of the overall amount of "need" payments necessary to achieve widespread service is necessarily most difficult. "I predict," Pogue added, "that we shall have airplanes so much better and more economical as to make the cost estimates and headaches of today entirely inapplicable. When that time comes, air service can and will be extended to additional categories of light-traffic areas."

In discussing the role individual communities could play in securing for themselves the maximum of air transportation service, Pogue advised that a general educational program pointing up the fact that air travel is no longer a luxury form of transportation is almost certain to be advantageous.

Directors of PCA, Northeast Approve Merger Proposal

NEA Would Be Fused Into PCA System If Plan Carries

A PROPOSAL for the merger of Pennsylvania-Central and Northeast Airlines was laid before the CAB last fortnight. Directors of both companies approved the move, a joint announcement said.

PCA President C. Bedell Monro and Paul F. Collins, head of Northeast, said that the merger would be accomplished by the issuance of one-half a share of PCA stock for each outstanding share of Northeast stock.

The board of directors of each corporation sanctioned this amalgamation in special meetings held by PCA's board in Washington and Northeast's in New York. As a result of this merger, which must yet obtain formal approval of the CAB, as well as the stockholders of each airline, the routes, equipment and identity of Northeast Airlines will be fused into the PCA system. Pending the necessary approval, each airline will continue to operate independently over the territory it now serves.

PCA, with a network of 4000 miles serving more than 50 cities of the highly industrialized east, south and mid-west, will become vastly strengthened with the addition of the more than 1000 miles presently served by Northeast, company officials said.

Both PCA and Northeast heads emphasized that, although Northeast would become part of the PCA system, the personnel of that airline will be offered new job opportunities by a PCA expansion program now in effect which will more than double the personnel and triple the passenger-carrying capacity in less than a year.

As of Aug. 1, Northeast reported total assets of \$2,473,733 and total liabilities of \$630,608, leaving a net worth of \$1,843,125. The company had 500,000 shares of common stock outstanding at \$1 par value.

Clipper Express Charges Reduced by Pan American

Pan American Airways announces reductions in Clipper Express charges between New York and Shannon, London and Lisbon. On file with the CAB, the new rates will go into effect simultaneously with the downward revision of passenger tariffs.

Air shipments to England, Scotland and Wales will be handled through London for \$1.17 per pound, as compared with the present rate of \$2.02. The rate to Shannon will be \$1.09 per pound, a 69 cents unit saving as compared with the current charge.

Non-Stops Will Speed Up Domestic Schedules

U. S. airlines last fortnight were shortening up route mileages and speeding up schedules with non-stop operations.

American presented the Civil Aeronautics Board with a series of thirty, 20 of which received immediate approval. Acting under its "substantial departure" rule, the Board decreed that the remaining ten should be tested against the public interest in open hearings.

Other carriers were thinking along the same lines. Pennsylvania-Central Airlines received the Board's authorization to operate through flights between Washington and Akron, between Detroit and Youngstown, and between Baltimore and Cleveland on Route 14.

National Airlines, anticipating the use of DC-4s it has on order, asked the Board's okay on non-stops between New York and Miami and between New York and Tampa.

Northwest filed for a series of through operations between Minneapolis-St. Paul and New York, Detroit, Spokane, Seattle and Billings, Mont., between Seattle and Billings, and between Milwaukee and New York.

In America's case, the Board approved non-stops between El Paso-Los Angeles, El Paso-San Diego, Boston-Chicago, Boston-Detroit, New York-Dallas, New York-Fort Worth, Washington-Dallas, Washington-Fort Worth, El Paso-Mexico City, Fort Worth-Mexico City, Dallas-Mexico City, Chicago-Fort Worth, Chicago-Dallas, St. Louis-Fort Worth, St. Louis-Dallas, Dallas-Los Angeles, Fort Worth-Los Angeles, Tulsa-San Diego, Dallas-Phoenix, and Fort Worth-Phoenix.

CAB rejected American's proposals for non-stops between New York-Oklahoma City, New York-Tulsa, Washington-Oklahoma City, Washington-Tulsa, Chicago-Tulsa, Chicago-Oklahoma City, Tulsa-Tucson, Tulsa-Phoenix, Tulsa-Los Angeles, and Oklahoma City-Los Angeles, by ruling that such operations constituted a "substantial departure" from the course between these points outlined in AAL's certificates.

The carrier shortly thereafter made formal application for permission to operate these through flights, and the application has been set down for early disposition by the Board.

Colonial Plans for 1946

Colonial Airlines will inaugurate service on its New York-Ottawa route by Jan. 1, and on its Ottawa-Washington route the following month. Sigmund Janne, president, announces. The Ottawa-Washington route provides for intermediate stops at Baltimore, Md.; Reading, Wilkes-Barre and Scranton, Pa.; Elmhurst, Syracuse, Watertown and Massena, N. Y.



STARTING LINE

Beginning with V-J Day and continuing through the plant clearance and inventory period, the Beech plant has lacked the sounds of production.

Now the sounds of rivet guns, presses, drop hammers, and compressors again are heard. The production of peacetime airplanes has begun at one end of the plant while the war surplus clearance goes on at the other.

The modest beginning of a production line shown above is like the first sign of Spring. It forecasts the future. Soon there will be several production lines operating, with new peacetime

BEEHCRAFTS leaving them for all parts of the world, to contribute to the reconstruction efforts of all nations.

★

BEEHCRAFT invites inquiries about peacetime airplanes that will render the same class of ruggedness, dependability, and efficiency that has become the world-wide reputation of the BEEHCRAFTS built for the war. All types of BEEHCRAFT products will be designed and built in a way that will enhance BEEHCRAFT'S priceless reputation for quality products.

Beech Aircraft



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California Produce Concerns Ask 10c Cargo Rate

Average Consumer Will Pay 10c-Pound Premium

By FRED S. HUNTER

AIR CARRIERS will have to shoot at rates which scale down to less than 10 cents a ton mile to develop airborne perishables traffic to an appreciable degree.

This is the high-spot conclusion contained in a report prepared on air freight for fresh fruits and vegetables by Ralph E. Myers of Salinas, Calif. and Glenn F. Phillips of Fallbrook, Calif. for the United Fresh Fruit and Vegetable Association after making 30 plane-load shipments carrying 365,369 pounds of produce from California to eastern markets.

In outlining their findings, the authors of the report come to this conclusion:

"Given opportunity to obtain airborne merchandise in her daily purchases, the average consumer—except in extremely low income groups—will gladly and without show of sales resistance, consistently pay an overall premium averaging 10 cents a pound over prices paid for merchandise available through other forms of transportation. Shipments of perishables on any appreciable scale within the near future will be determined by whether the cost of delivering airborne merchandise, including the extra cost of pre-packaging, can be held within the limits of this 10 cents per pound overall average premium."

For eastern seaboard markets like New York, 10 cents per ton mile translates into approximately 12½ cents per pound on the selling without making allowance for pre-packaging costs. For Chicago it is about an even 10 cents.

Expresses Disappointment

The report expresses disappointment over the attitude of the air carriers toward the experimental shipments made by the Ralph E. Myers Co. and toward the airborne project generally.

"Although representatives of established airline carriers professed a deep interest in the field of air freight for perishables at the Chicago conference of the United Fresh Fruit and Vegetable Association early in the year, this interest did not manifest itself during the period of these tests," the report reads. "With a few notable exceptions, the general lack of cooperation and unwillingness to assist wholeheartedly in this experiment was readily apparent throughout the entire project."

Despite the many handicaps that were presented in conducting the experiments and the comment on the attitude of the airlines, the Myers-Phillips report carries a high note of optimism and expresses the belief that the produce industry will experience a marked stimulus in the overall consumption of its products through their shipment by air.

Exact controls of quality, grade and maturity are possible with air freight since 100% delivery in comparable condition is attainable, the report declares. It also holds that it is economically feasible for certain types of carriers, operating effi-

Shipments of Perishables made by the Ralph E. Myers Co. of Salinas, Calif.

Consignee	Cargo Carrier	Plane Type	No. Pounds	No. Plane-loads
Carbone Bros. & Co., Inc. New York	United Air Lines	Douglas DC-3	5,750	1
Griestede Bros., Inc. New York	National Skyway Freight Corp.	Budd Conestoga	8,000	1
Fisher Brothers Co. Cleveland	United Air Lines	Douglas DC-3	22,376	4
Fisher Brothers Co. Cleveland	American Airlines	Convair M-39	70,502	4
Atlantic Comm. Co. Detroit	American Airlines	Convair M-39	52,617	3
Jarson & Zerilli Co. Detroit	American Airlines	Convair M-39	52,282	3
Jarson & Zerilli Co. Detroit	National Skyway Freight Corp.	Budd Conestoga	8,000	1
Penn Fruit Co., Inc. Philadelphia	American Airlines	Convair M-39	68,278	4
Charles Abbate Co. Chicago	American Airlines	Convair M-39	17,457	1
Colonial Stores, Inc. Atlanta	National Skyway Freight Corp.	Budd Conestoga	8,000	1
E. R. Godfrey & Sons Co. Milwaukee	National Skyway Freight Corp.	Budd Conestoga	8,000	1
L. Yukon & Sons Prod. Co., Inc. Kansas City	National Skyway Freight Corp.	Budd Conestoga	16,000	2
Wesco Foods Co. Chicago	United Air Lines	Douglas DC-3	5,335	1
Baltimore Markets, Inc. Philadelphia	United Air Lines	Douglas DC-3	5,500	1
Enswest Prod. Co. (Safeway Stores, Inc.) Denver	United Air Lines	Douglas DC-3	17,272	2
TOTALS			365,369	30

ciently, and with the ability to develop a reasonable tonnage of payload on the backhaul, to carry a large tonnage of perishables at tariffs which would enable a consumer price premium sufficiently small to accomplish free movement and widespread consumption of these products.

Moreover, the report emphasizes that dehydration in transit, a serious problem in the rail shipment of some commodities, can be entirely eliminated in air shipment. Wrapping or pre-packaging and shortness of transit time, make it possible to deliver airborne merchandise from California ounce for ounce and pound for pound at destination points anywhere in the United States.

The report contains suggestions to the aircraft manufacturers for the type of equipment best suited for the transportation of perishables. To engage successfully in large scale commercial hauling of fresh fruits and vegetables, airplanes should embody these requirements:

1. Must be able to carry a minimum payload of 18,000 pounds, preferably more.
2. Must be equipped or insulated for both cold and heat control within a range of 36 degrees to 42 degrees Fahrenheit.
3. Must be so built as to accommodate "palletized loading," partly for speed in loading but especially so that loading can be predetermined.
4. Should be designed to provide a cubical (or rectangular parallel-piped) loading space as opposed to the cylindrical shaped fuselage interiors now available on most transports.
5. Should have a "clear through" cargo space unbroken by wing construction.
6. Should be so constructed as to permit level loading and unloading at customary truck heights.

No commercial or municipal airports at present have proper facilities for efficient handling of air freight on a commercial scale, the report recites. For perishables, airports should have refrigerated air conditioning equipment as well as heating devices to hold lading temperatures at desired levels during stops.

Airborne perishables must be pre-cooled, the report says, as it was found that temperatures at flying altitudes provide little or no assistance in keeping perishables at desired temperatures.

Pan American Cuts Fares On Latin American Div.

New reductions in fares over the Latin American trunk line routes of the company have been announced at the New York office of Pan American Airways. This was accompanied by an announcement by Panagra, affiliate company, of similar reductions over its entire west coast system. Tariffs being filed with the CAB are to become effective Jan. 1, both for travel to and from the U. S. and in the countries to the south. They are said to represent a 60% decrease in travel costs to the public since the trunk line services were established between the U. S. and the main South American capitals.

Examples of the fare reductions: Miami to Lima, \$320 to \$310; Lima to Buenos Aires, from \$210 to \$200; Santiago to Mendoza, \$30 to \$20; Antofagasta to Buenos Aires, \$123 to \$113.

AiResearch Actuators

FOR HIGHEST PERFORMANCE—LONGEST LIFE

OVER 55,000 NOW IN USE

ACTUATORS—AiResearch makes a complete line of electric actuators for military and commercial aircraft—engineering and manufacturing the motors and all component parts. In the last two years 28 different models, which are variations and combinations of 8 basic torque and linear types, have been produced.

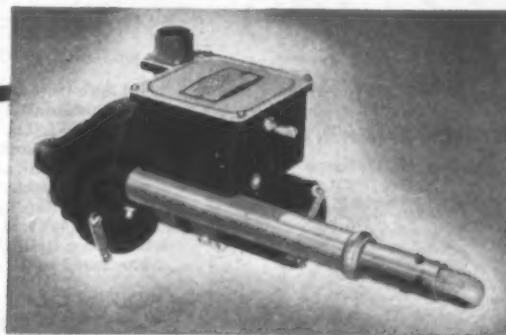
First to build the linear type actuator, AiResearch has recently made another contribution to the development of actuators in a simplified brake which will stop a 10,000 R. P. M. actuator motor in from 4 to 5 turns. All AiResearch actuators are relatively trouble free... designed to perform over extremely long life cycles...for they have a great re-

serve of strength and durability. Ratings of the 8 basic actuators now being built are: 100, 300, 750, 800, 1200, 1600, 2000 and 10,000 pounds.

In tests AiResearch actuators have raised 2000 pounds 10,000 times *without failure*. And they have been run through 60,000 complete, normal operational cycles during which the motor made 300,000,000 revolutions—equal to the normal life of two transport planes.

AiResearch actuators are famous for their quality, modern design, light weight, efficiency and greater potential life.

For further information on any specific problem, write AiResearch Manufacturing Company of Los Angeles, Calif.



MOTORS

—AiResearch has designed and is now building 400 cycle single and three phase motors for actuators, a unique development in the aircraft field. They range from 1/50 to 1/4 horsepower and are equipped with the newly developed AC brake. Each is small, compact, precision built and designed to operate under extreme conditions, including temperatures ranging from -65 degrees to +165 degrees F.



AiResearch — manufacturers of AIR CONTROL equipment for military and commercial aircraft • Cabin Pressure Regulating Systems • Engine Oil Cooling Systems • Supercharger Aftercooling Systems • Temperature Control Systems • Engine Intercooling Systems • Automatic Exit Flap Control Systems

AiResearch

DIVISION OF

THE GARRETT CORPORATION

National Airlines



Fastest Schedules in the World! National Airlines makes the trip from New York to Miami in 6 hours, 55 minutes! . . . Jacksonville to New Orleans in 2 hours and 42 minutes!

Timed by Benrus

The official watch of
National Airlines



The Benrus Chronograph, pictured above, is worn by National Airlines flight personnel.

Benrus also offers a wide selection of popular-priced watches in all styles. See these beautiful timepieces for men and women—at better jewelers, everywhere.

BENRUS

Official watch of famous Airlines



WE HAVE just returned from the National Aviation Clinic in Oklahoma City, where we heard some good speeches, had a good time and continued to be amazed, as we have for three years, at the way those Oklahoma City people dish out hospitality . . . Show us a place in the U. S. that can beat it . . . Our thanks again to all concerned . . .

We liked Jack Frye's remark, in his Clinic speech, that some airport terminal facilities have deteriorated to the place where they are no better than "second-rate bus stations" . . . We have been in some recently (terminals, not bus stations) . . . St. Louis is a good example—or a bad example . . . The other evening the trash and cigarette butts were knee-deep in the terminal . . . Johnny Randolph, airport manager, is a friend of ours (we hope) and we told him about it . . . He explained that there is a help problem late at night which complicates matters . . . Anyhow, it looked bad . . . And whoever designed that terminal building is no friend of ours . . . The benches in the waiting room are next to the door, which is being constantly opened . . . In cold weather, this is definitely not a place to sit in comfort . . . Let's get St. Louis a new terminal, whaddya say? . . .

The things that are going to happen in the airplanes of the future never cease to amaze us, but we never thought of this one . . . John Victory of the National Advisory Committee for Aeronautics, made an excellent speech in Oklahoma City . . . Listen closely to this: "Not the least of the problems associated with flight at high speed is that associated with the heating of the airplane by friction with the air. Even at speeds below the speed of sound the increase of temperature is such that cabin cooling is required at ordinary altitudes and air temperatures. For example, a cabin temperature of about 150 degrees F. would be reached at the speed of sound if the outside air temperatures were 50 degrees F. At speeds greater than the speed of sound, the resulting temperatures greatly exceed the limit of human endurance, reaching about 360 degrees F. at twice the speed of sound, with outside air temperatures zero. This problem can be solved by efficient, compact and light-weight refrigeration systems" . . . Think of that . . . As you zip along at 1,000 miles per hour, you'll say, "My, my, it's zero outside. Turn on the cooling system . . ." Wacky, isn't it . . . ?

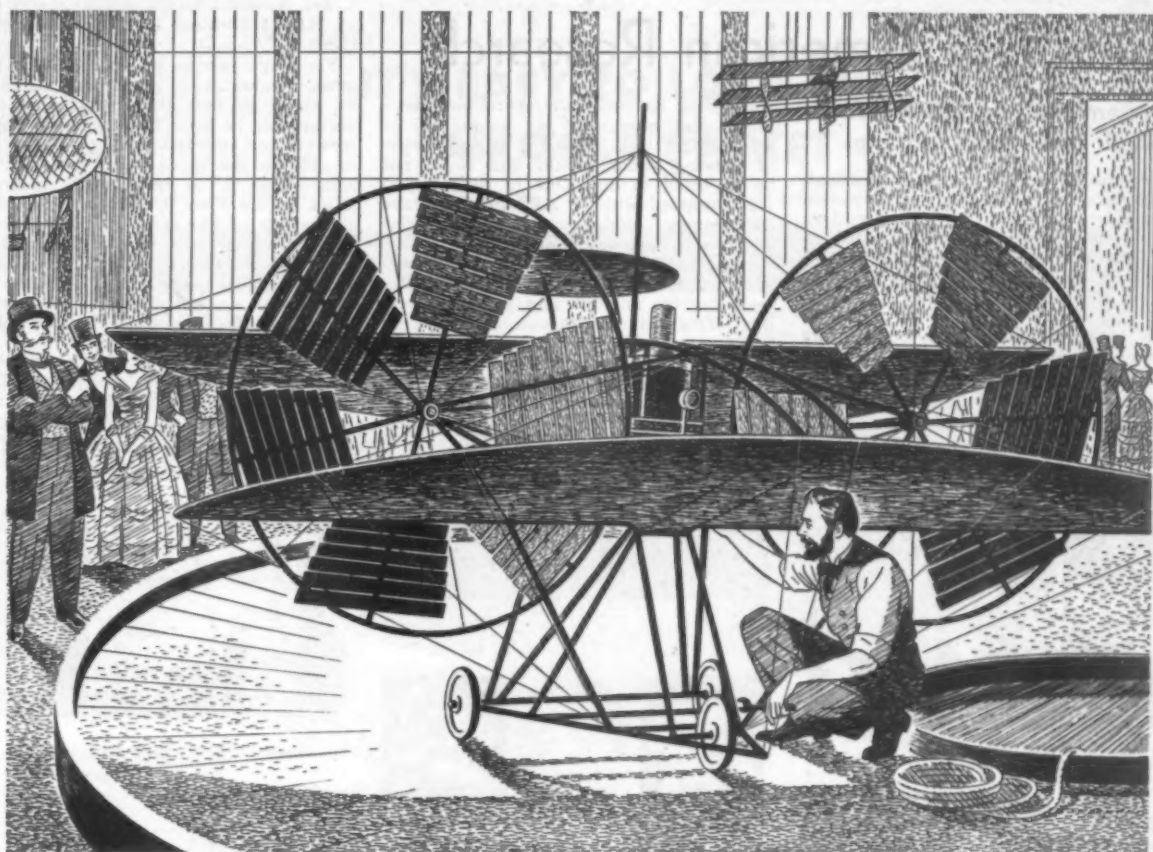
There was a banquet given a couple of weeks ago in Montreal during the International Air Transport Association meeting . . . A lot of bigwigs were there . . . The master of ceremonies was a local Montreal official and he was introducing some of the honored guests . . . among whom was John Cooper, vice president of Pan American Airways . . . Well, Mr. Cooper was introduced as vice president of American Airlines . . . Now, there's a lot of difference between Pan American and American—they've been slapping each other's wrists about a trans-Atlantic route . . . A polite titter ran through the audience, followed by a good hearty laugh . . . Mr. Cooper was slightly embarrassed and received a lot of kidding, which he took good-naturedly . . .

While in Canada we visited one of the aircraft factories and in one of the offices saw a slogan hanging on the wall . . . We pass it on to you airline people: "If the boss wants anything done, it simplifies matters a great deal to let him have his own way" . . . Ain't it the truth . . .

One airline crew has been enshrined on a menu . . . A few weeks ago, when Pan American Airways was making a route check on the New York-British Isles run, the crew was given a luncheon by the management of the Shannon, Ireland, airport . . . Here was the menu: Durst broth, in honor of Capt. Audrey D. Durst, captain of the survey plane; Lobster a la Porte, in honor of Mike la Porte, one of PAA's veteran pilots; Cutlets Cuthbert Snowdon, honoring Bert Snowdon, who handles trans-Atlantic passenger service; Carrots Dionne, for Donald Dionne, trans-Atlantic instrument flight training chief; Houston sauce, for Harold Houston, head of PAA's international passenger service; greens a la Sheamus Dugan, for Capt. Arthur J. Dugan . . . A fancy ice cream dish was named for Capt. Edward Hodson . . . A nice tribute . . .

We had an interesting talk the other day with Art Woodley, who runs Woodley Airways in Alaska . . . Art says he isn't a "bush" flyer any more—he's in the airline business . . . Anyway, he told us some amusing yarns about airports in Alaska . . . Before the war, he says, there were very few fields of any kind in Alaska and in some places pilots had to land almost anywhere they could get down—skim in just over a fence, set 'er down and stop fast . . . Then came the war . . . The Army moved in and built huge fields like crazy . . . He says it was quite a sight to see some of the oldtimers land at these big fields . . . They'd skim in over the fence and put the wheels right on the end of the runway, and stop fast . . . Only trouble was they'd have about 5,000 feet of unused runway in front of them, so they'd have to spend the next 10 minutes taxiing . . . 'Twas hard to get them used to the idea of using at least half of these long runways, Art says, because it just went against the grain . . . Must have been an amusing sight . . .

ERIC BRAMLEY.



Thomas Moy, engineer-member of the Royal Aeronautical Society, designed this model with 114 square feet of wing surface. It weighed 120 pounds and was powered by a 3 h.p.,

80 lb. steam engine driving six-bladed windmill-like propellers. Tested at London's Crystal Palace in 1875, the tethered model rose six inches—the heaviest power machine yet to fly

An Englishman's "AERIAL STEAMER" had the *LIFT* to rise 6 inches

FROM A 120 pound model rising six inches to today's multi-ton aircraft flying the stratosphere—man has fought the battle of Lift versus Drag.

First, he sought enough *Lift* to support man and machine. Since then, constantly, he has battled to increase this useful force of air around a wing... and to reduce the *Drag* of air against the plane's passage.

Many men have been in this battle. Some, including Northrop, have revolutionized the construction and shape of wings. Witness, for example, the better Lifting surfaces that have come from Northrop—pioneered multicellular wing construction, split flaps and retractable ailerons.

Note, too, some of Northrop's contributions to the reduction of Drag: The first monocoque fuselage, the first wing fillets, the first all-metal, stressed skin monoplane were all Northrop developments. And the first successful all-wing airplane design, the Northrop *Flying Wing*.

Lift versus Drag is still aviation's problem. In the days ahead, you'll find the Northrop group constantly adding new solutions... constantly working toward better lifting aircraft to fly you with greater speed, comfort and economy than you have ever dreamed. Northrop Aircraft, Inc., Northrop Field, Hawthorne, California.



NORTHROP

Creators of the *Black Widow*
P-61 Night Fighter



and the *Flying Wing*



Radar's Commercial Aspects Sought in American Research

System May Be Utilized For Blind, Instrument Landings

American Airlines is making a thorough investigation of radar and its application to commercial air transport operations and has already completed the first phase in a research program which takes on increasing significance in view of the growing difference of opinion between CAA and airline engineers in regard to future navigational, approach control and instrument landing systems. **AMERICAN AVIATION** learned last fortnight.

Step one in American's investigation consisted of equipping two aircraft with radar sets obtained from the military,

and letting its engineers, operations executives and pilots see for themselves in actual flight tests what the various types of existing radars could and could not be expected to do. One of the aircraft was equipped with an APS-10 microwave 360 degree navigational search radar which was developed by the armed services primarily for navigational purposes and has an installed weight of 150 lbs. including the antenna and antenna housing. This set operates on the reflected wave principle of the true radar and can therefore be used both as a collision warning device and for navigation. In the latter capacity it can also be used with radar ground beacons, and the American investigation included explora-

tion of both these possibilities, with special beacons being set up for the latter tests.

The second aircraft was equipped with an APS-4 forward looking night fighter radar.

For stage two in its experimental program, American is modifying the APS-10 radar so that the scanning area or sector will be only from 180-210 degrees forward, or approximately what the pilot is able to see in contact flight. At the same time it is moving the reference point on the Plan Position Indicator from the center of the scope to the bottom or South position so that the pilot will get the same picture of radar beacons on the scope that he would get of ordinary beacons in contact weather. The set is being modified at the Aircraft Instrument Laboratory in Mineola, L. I.

The modified APS-10 set and the APS-4 set will be installed in a special DC-3 which has just been purchased by American for radar experimentation, and will be subjected to further extensive testing.



Lothian Olinger Warner



Favour Lundmark Finkbeiner

Executive

Col. Frederick G. Betts, former chief of staff of the Eighth Fighter Command, has been named executive assistant to E. Lee Talman, TWA's senior vice-president.

Col. Leonard M. Rose has been appointed assistant to Benjamin F. Pepper, chairman of the board, TACA Airways.

C. E. Lawton has been promoted to assistant treasurer of TACA Airways Agency.

George E. Wardman has been named assistant to Robert L. Cummings, manager of the Atlantic Division of Pan American Airways.

Frank E. Busch has been appointed manager of TWA's Intercontinental Division.

Operations

Capt. Charles S. Vaughn has been appointed chief pilot of the Atlantic Division of Pan American Airways.

Frances E. Williams has been named station manager for Eastern Air Lines at Detroit; David W. Baughman at Cleveland, Harold A. Diggs at Akron, O., and Edward M. Barbee at Roanoke, Va.

Capt. G. B. Lothian has been appointed check pilot for the government transatlantic service operated by Trans-Canada Air Lines.

Harold F. Blackburn has been named director and W. G. Gollen superintendent of flying operations of the Atlantic region of TWA's International Division.

F. D. Bartholomew has been named station manager for PCA at Rochester, N. Y.; Harold B. Simpson at Elmira-Corning, and Robert E. Probst at Williamsport, Pa.

W. Kemper Jacks has been named supervisor of operations of TWA's Intercontinental Division.



Vaughn Dwinell Wardman

Traffic

George W. Brown of Beverly, Mass., has been named city traffic manager for Northeast Airlines at Boston.

R. B. Stevenson has been named assistant to Christopher de Groot, general traffic manager of Panagra at New York.

Charles A. Tohan has been appointed traffic manager of Eastern Air Lines' new Great Lakes Division, with headquarters in Detroit. John Grandland was named city traffic manager in Detroit. Robert Forrest will serve as terminal control and reservations manager in the same city. Donald Ewald was named city traffic manager at Cleveland, and John Walker at Cleveland reservations manager.

Morgan T. Bellah has been named regional traffic manager for PCA at the Greensboro-High Point terminal.

Maj. John G. Maxwell has been appointed district traffic manager for Trans-Canada Air Lines at Winnipeg, succeeding H. D. Harting, recently appointed to the company's general traffic department.

W. Thorne (Whitey) Rimes has been named regional agency manager for the western states for American Airlines, with headquarters in Los Angeles.

Gordon Olinger has been named assistant manager of Continental Air Lines' flight service department. He formerly was director of personnel for the company.

Carl A. Finkbeiner, John A. Lundmark and Stan Favour have been named staff assistants in the Kansas City cargo sales department of TWA.

William T. Keller has been named district traffic manager for PCA in Rochester, N. Y.

Walter Brown, Jr. has been appointed Director of Passenger Sales for TWA's International Division.



Rimes Betts Rose



Busch Baldwin Jacks

Maintenance

Harold L. Millican has been named assistant superintendent of maintenance of Delta Air Lines. He formerly was chief inspector for the department.

Lloyd E. Nell has been appointed assistant superintendent of maintenance in charge of the engine overhaul shop at Northeast Airlines. He formerly was with Pratt & Whitney.

Miscellaneous

C. K. Dwinell has been named superintendent of food service for TWA. He formerly held executive capacities in hotels and restaurants.

Dr. John Baldwin, Jr., has been named medical director of TWA's Intercontinental Division.

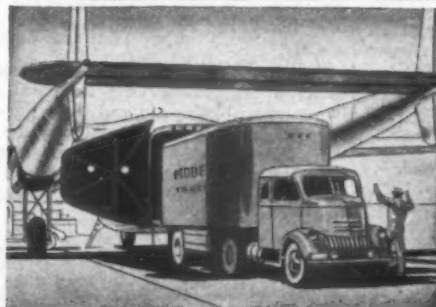
Eugene Patterson Warner has been named Publicity Director of TWA's International Division, and Stanley Schlenker has been appointed Director of Advertising.

Wesley B. Warren has been named employment manager for Delta Air Lines.

Sterling Slappay, former staff member of the Atlanta Constitution, and Walter Wima, photographer, have joined the public relations department of Delta Air Lines.

Miss Ellen Gibson has been appointed publicity assistant in Braniff Airways publicity department.

IT'S EASY TO LOAD THE FAIRCHILD PACKET



The Army can drive 10-wheeled trucks, tanks, and many other units of heavy military equipment right into the spacious hold of the Fairchild "Packet".

Or bulky cases can be "walked" from a trailer truck directly onto the floor of this "flying boxcar." (Note: Horizontal "Packet" floor is same height as standard truck floor.)

Smaller packages can be loaded through the forward door or through the paratroop doors at the rear when the tail is closed.

Think what this efficient cargo handling will do for the air shippers of tomorrow! Fast flying freight . . . safe, easy loading . . . costs comparable to surface transport at air express speeds.

All Fairchild Aircraft Division's production facilities are now building the "Packet" in quantities exclusively for the Army Air Forces.

Additional and more detailed information can be obtained by writing Transport Sales Division, Fairchild Aircraft, Hagerstown, Maryland.

BUY U. S. WAR BONDS AND STAMPS

Fairchild Aircraft
Division of Fairchild Engine & Airplane Corporation, Hagerstown, Maryland

CAB Policy of Measuring Air Mail Payments Hit

Profits Should be Used For Research, Equipment

CRITICISM of the Civil Aeronautics Board policy of measuring air mail payments by the yardstick of financial need by the carriers was voiced by A. T. Colwell, vice president of Thompson Aircraft Products Co. and chairman of the Cleveland Airport Commission, in an address before the Southern California Chapter, Society of Automotive Engineers, meeting in Los Angeles.

"Over the next 10 years, the government should not cut the air mail rates just as fast as the airlines become more efficient," Colwell declared. "Airmail rates should be kept as they are so that the airlines and the aircraft manufacturers can plow back their profits into research and new equipment for the good of the country."

The past practice of penalizing the airlines for increased efficiency by constantly cutting the mail rates will stultify the development of American military and commercial aviation, he added.

A fleet of 5,000 transport planes operated by the United States airlines would represent a priceless asset for national defense, the speaker declared, and what is needed to get this fleet and keep it going is adequate financing.

With 300-mile an hour planes, the airlines will be at the point where they cannot cut direct flying costs much more, Colwell said. The reductions of the future in cost of operation will come in administrative and ground operations, which represent about 60 per cent of total operating costs. To achieve cost reductions in this direction, he advocated the pooling of such facilities as ground equipment and ground personnel.

Colwell also warned that civil aviation in this country will be tragically hindered unless cities, states and the federal government take measures to keep ground facilities abreast of the developing air network.

"Mass travel by air can only come with adequate development of airports," he said. "At present, the nation's airlines already have expanded to the point where airport facilities are totally inadequate."

Radar landing systems are too expensive, Colwell told the engineers, and the most important contribution to all weather flying will come from the Army's method of landing on a radio beam.

"Adoption of this new instrument landing procedure will permit the airlines to fly 99 per cent of their schedules regardless of weather," he said. "Radar will make its major contribution by telling pilots their altitude when they are flying over clouds, by warning them of impending storms and by safeguarding them against mid-air collisions."

To attract buyers, the private plane will have to sell for about \$2,000, Colwell declared.

"The lightplane manufacturers will eventually be able to meet this specification," he said. "But the light plane is not useful unless adequate flight strips and airports are provided."

Danish Line's Application Up Before CAB Examiners

Work on the application of Det Danske Luftfartsselskab A/B (DDL—Danish Air Lines), the second Scandinavian carrier to appear before the Civil Aeronautics Board seeking a foreign air carrier permit for a route linking its national capital with the U. S., was begun last fortnight at a prehearing conference before CAB Examiner Frank A. Law, Jr. Representing DDL was Max Westphall, the company's U. S. agent, and the Washington legal firm of Wheat, May, Shannon and St. Clair, who are also Swedish Intercontinental Air Lines' (S.I.L.A.) attorneys.

The outline of proof required of the applicant, as presented by Public Counsel Robert B. Hankins, followed generally the previous requirements imposed on foreign air carriers in previous conferences of the same type. Examiner Law indicated that he would require a full showing on any "cooperative" or other inter-company or inter-governmental working agreements of any sort which involved DDL, including any cartel arrangements pointing out that such agreements might conceivably have some bearing on the matter of "substantial ownership and effective control" of the applicant carrier in which the Board is interested. Omar L. Crook, the company's attorney, told the examiner that it was hoped to have Knud Lybye, DDL's managing director, present at the hearing. Lybye, he said, could testify from personal knowledge that at least 94% of the line's stock was held by Danish subjects or corporations. Crook also quoted a paragraph from the company's Articles of Incorporations requiring that stockholders, to be permitted to vote, must satisfy the Danish government that they are bona fide Danish subjects, limited stock companies, or other Danish groups.

In the absence of Lybye, Westphall holds a power of attorney to act for DDL. The applicant will provide for the record a copy of the 1934 air transport agreement between the U. S. and Denmark, and of the recent Five Freedoms air transport agreements.

AAA Wants to Try Combination Passenger-Pick-up Operations

Combination passenger-pick-up operations using the same plane will be tested in actual operation if the Civil Aeronautics Board grants an application filed last fortnight by All American Aviation, Inc. The nation's only pick-up operator asked the Board for a temporary exemption order to permit experimental testing of this type service over two routes between Pittsburgh and Huntington, W. Va. (Docket 2125).

The application states that actual operation of the new type service is the only way to acquire the experience necessary to prove to the Board that other combination systems should be certificated on the same experimental three-year basis that will presumably be used for testing conventional local air services.

AMEX, TWA Oppose PAA's Route Amendment Plans

Pan American Airways' application for amendment of its European route certificates met immediate opposition at a prehearing conference held before a Civil Aeronautics Board Examiner as attorneys for American Export and TWA announced that they would file with the Board motions asking that PAA's application be dismissed. Such motions somewhat unusual in the Board's procedure, but should the motions be granted, the case could conceivably be dropped without any further action.

TWA's attorney George Spater strongly opposed the changes PAA is asking; he also objected to the rapid handling of the application which seems to be indicated by the fact that the Board lifted the proceeding from its normal position on the docket and set it down for early prehearing.

PAA, charged Spater, is merely seeking to pick up additional territory in Europe and to encroach on areas already laid out in the Board's North Atlantic decision. Its application, in effect, is nothing more than another petition for reconsideration of the North Atlantic decision. He predicted that the present proceeding, if allowed to continue, would amount to little more than a rehash of the territorial division arguments made in the earlier case, and urged that the area divisions made by the Board at that time be left undisturbed.

Edward Bierma, attorney for Amex, stated that his company opposed PAA's request for permission to serve Frankfurt, Germany, adding that Amex planned eventually to serve that point itself.

No agreement could be reached on dates for exchange of exhibits or for hearing—PAA asked for hearing in December; the interveners urged that it be deferred until Spring. The dates will be set by Examiner Ross I. Newmann in his prehearing conference report.

Transatlantic Route Asked By Norwegian Air Transport

Royal Norwegian Air Transport last fortnight applied to the CAB to operate a transatlantic air route between Norway and the U. S. Freight, passengers and mail would be carried with C-54 equipment on the basis of roundtrip service twice weekly.

The proposed routes would follow the great circle, linking Oslo and Stavanger, Norway, with Chicago and New York, via Reykjavik, Iceland, Greenland and Goose Bay, Canada. Alternate routes would go via Foyines, Lages in the Azores, Prestwick, Scotland, and Gander, Newfoundland.

The application was filed by L. J. Jorstad, charge d'affaires at the Norwegian embassy, Washington, through the aviation division of the State Department.

Legal Tangles Set Off Testimony in CAB Case

Mississippi Valley Hearing Closes in New Orleans

By DANIEL S. WENTZ II

SPARKED by a series of somewhat unusual legal tangles, the Civil Aeronautics Board's Mississippi Valley Case hearing closed in New Orleans last fortnight after Board Examiners Ferdinand D. Moran and James S. Keith had completed nearly three weeks of testimony-taking. The hearing followed the now-familiar regional proceeding pattern; the major airlines presenting their cases at the outset; with the non-certificated carrier applicants following.

After a day of appearances by city interveners, the hearing moved on to the consideration of Braniff Airways' application for extension of its present system to New Orleans. Charles E. Beard, the company's vice president-traffic, testified that this extension would provide local, one-carrier service to points on Braniff's routes. A part of Braniff's case was designed to show the Board precedents for competitive services it proposes between Fort Worth-Dallas and New Orleans, between San Antonio, Houston and New Orleans, and between Memphis, Little Rock and Fort Worth-Dallas.

Continental Air Lines' case for new routes between Kansas City and Chicago and Kansas City and St. Louis drew the fire of United Air Lines' attorneys who attacked the competence of evidence introduced in exhibits sponsored by Alvin P. Adams, West Coast research consultant whose firm had prepared the economic data offered by Continental. Opposing attorneys contended that much of the material used by Adams in preparing traffic estimates could be used only if competent supporting witnesses were made available for cross-examination on the material. Counsel for TWA and Braniff joined in United's objection to the exhibits, but all three were overruled by the examiners.

Adams also endeavored to testify as to what he considered was United's historical policy toward smaller carriers by reciting incidents of UAL's connecting services with Western Air Lines, but the examiners halted this line of testimony and ruled that it could accompany the record as an offer of proof if Continental prepared it in written form.

An interesting incident occurred during the presentation of Essair's case for new routes linking Houston, the line's present southern terminus, with New Orleans, when counsel for Southern Airways attempted to show, through cross-examination, that C. W. Murchison, one of Essair's major stockholders, also possessed substantial interests in certain Texas bus companies. Essair offered to present evidence on Murchison's surface holdings, but the examiners ruled that this offer of proof was not required.

Eastern Air Lines' chief witness, First Vice President Paul F. Brattain, set off a heated legal battle when he presented a 16-page statement of written testimony

which was immediately attacked as argumentative by counsel for TWA, Delta, Braniff, Chicago and Southern, National, Mid-Continent, and by Public Counsel. TWA's attorney James K. Crimmins, moved that Brattain's entire statement be stricken from the record, but it was later admitted to cross examination by Examiners Moran and Keith.

G. T. Baker, National Airlines' president, charged during the presentation of his company's case that Eastern Air Lines held a monopoly in the South and East. National, Baker declared, found itself hemmed in by Eastern, to the North and East, and could expand only to the Northwest, West and South.

Exhibits presented by National supporting its applications proposing one-carrier one-plane service between Florida Points, Mobile and Gulfport, Miss., on the one hand, and New Iberia, La., Port Arthur, Galveston, Houston and San Antonio on the other, plus various local services for smaller communities along NAL's system, gave rise to another controversy when attorneys for Eastern, Braniff, Delta, Southern Bus Lines and Chicago and Southern refused to cross-examine on the exhibits. The opposing lawyers claimed that these applications of National had been so recently consolidated with the Mississippi Valley case that they had not had sufficient time to prepare for cross-examination upon them.

To resolve this difficulty, the examiners proposed that a later session of the hearing be held in Washington, to receive evidence on National's disputed applications and to permit United Air Lines to introduce rebuttal evidence opposing Continental's Kansas City-St. Louis and Kansas City-Chicago proposals.

Following the presentations of the certificated carriers, a series of feederline cases were heard. Applicants appearing in the later sessions of the hearing included Aviation Enterprises, Inc.; Burlington Transportation Co.; Central Airlines, Inc.; Ozark Airlines, Inc.; Clear Ridge Aviation, Inc.; Dixie Air Transport Co., Inc.; Houston Airways, Inc.; Kansas City Airways, Inc.; The Kratz Corporation; Roy O. Mallon (P. T. Air Service, Inc.); Parks Air Transport, Inc.; and Skylines, Inc. Many of these applicants had the greater portion of their applications heard in the previous Texas-Oklahoma and North Central Cases.

NAL Wants to Fly DC-4s Miami, Tampa to New York

National Airlines has filed a notice with the Civil Aeronautics Board requesting permission to inaugurate non-stop service with four engine Douglas DC-4 aircraft between Miami and New York and between Tampa and New York, effective Jan. 1, 1946 or as soon thereafter as equipment is available.

H. S. Parker, Jr., vice president of NAL, states that the 46 passenger DC-4 aircraft would make possible the availability of a large increase in seats between Miami, Tampa and New York.

Ryan Favors Placing CAR Enforcement Within States

A proposal to place the enforcement of the Civil Air Regulations and the investigation of private flying accidents in the hands of the individual state governments was made last fortnight by CAB Member Oswald Ryan, in an address before the annual meeting of the National Association of State Aviation Officials at St. Louis.

Speaking on behalf of the entire Board, Ryan said that in its view, "consideration should be given to a plan whereby the States would share in this function of enforcement," possibly through some type of Congressional action which would authorize the "States and their officials to enforce the Federal regulations which have been adopted for the accomplishment of safety in flight." He asserted that there was no apparent legal or constitutional objection to such State enforcement.

To work out some plan for applying this proposal, Ryan, still speaking for the Board, suggested that a joint committee composed of representatives of the NASAO, the CAA and the CAB be set up to explore the possibilities of State participation in enforcement. Some such plan is necessary, he added, because the "Board's docket of enforcement cases, already substantial in volume, is certain to become a burden of serious proportions in the next few years unless some way is found to avoid that result."

Regarding the problem of accident investigation, which he stated would find its largest increase in the field of private flying, he asserted that since such flying is largely intrastate, the dividing line between Federal and State responsibility for the investigation of aircraft accidents was clear. "It would be of the greatest assistance to the Board," he continued, "... if some arrangement could be worked out between the Board, on the one hand, and the State agencies, on the other, whereby the investigation and reporting of private flying accidents would be performed by State authorities who would make available to the Board information and material developed in the course of such investigations."

Special Regulation Issued By CAB for DC-4 Aircraft

The Civil Aeronautics Board has issued a special Civil Air Regulation for DC-4 (C-54E) aircraft permitting them to operate until Feb. 1, 1946 without a master switch disconnecting all sources of electrical power from the electrical distribution system, and at a maximum take-off gross weight of 61,100 lbs. without fuel dump chutes.

Tests of the C-54 have reportedly been completed, and it is understood that the permanent licensed landing weight will be 58,200 lbs. Licensed take-off weight with R-2,000-7 and -11 engines has been set tentatively at 68,000 lbs., and with -9 engines at 73,000 lbs. However, it has been further established that the structure is good only for 68,000 lbs. without outer wing fuel tanks which are not included in the basic C-54, and even with the larger engines, such tanks will have to be included for licensing at the higher take-off weight.

THE HIGHLY INTRICATE financial structure of Pan American Airways' Latin American Division and the complex accounting procedures used in its maintenance appear to be set for a thoroughgoing overhaul by Civil Aeronautics Board financial experts in a CAB proceeding to determine a mail pay rate for the Division.

1945. Pan American took issue with numerous statements made by them in its show cause order, and the prehearing conference was called to define these issues squarely.

Under FAA's pre-war operating scheme, the LAD was only one of several divisions in the system. As such, it bore with the other divisions a share of the administrative and other expenses incurred in operating Pan American Airways as a System. These expenses are referred to as system expenses. During the war when most of the Pan American System, went under military contract operation, a major share of the system expenses had to be charged up to the LAD. This is in part responsible for the highly complex accounting procedures required in operating the division. As the company returns to a peacetime basis, the other Divisions will again bear a share of the System expenses. These problems are all a direct concern of CAB, which proposes to fix mail rates for PAA by Divisions rather than for its entire System.

wise and financially, incurring expenses which may be disallowed by CAB in its determination of a mail rate.

Public Counsel Harry Bowen, in a Memorandum to the parties defining the issues in the proceeding, declared that the accuracy and suitability of the accounting procedures used by PAA on the LAD was one of the major points to be determined. The Board's Tentative Statement attached to its show cause order referred to an apparent "instability in the accounting procedures," so great as to leave "little apparent correlation between the reported financial results and the reported physical operations." Public Counsel flatly stated that in his opinion, the "integrity of the reported figures" filed by Pan American is definitely at issue in the case.

Payments by Pan American to several of its "National" affiliates will also be in issue. Warner H. Hord stated that the Board was definitely interested in determining the extent to which the working capital of the LAD was being used as a sort of revolving fund to support the operations of the affiliated national companies. Also under discussion will be maintenance costs for DC-3 aircraft, which in LAD's case the Board found to be "unduly high in comparison with the reported experience of domestic airlines."

Because of the close relationship between the rate case and the Board's investigation of the operating contract between PAA and Panair do Brasil, it was agreed to hold hearings on both cases in close succession. Feb. 4 has been tentatively set for the hearing in the mail rate case, with the Panair Contract Investigation to follow Feb. 11.

UNITED AIR LINES, in a brief filed in the Denver-Los Angeles case in U. S. Court of Appeals for the District of Columbia last fortnight, declared that "the ambiguities and inconsistencies in the Civil Aeronautics Board's decision and its failure to pass upon important issues require that its orders be set aside by this court."

The carrier contends that the Denver-Los Angeles route should be made a part of the company's transcontinental airway rather than a "stub line" to be operated by Western. It points out that, under a two-carrier operation, more than 50,000 persons a year would be required to change planes at Denver.

"The Board has failed to make basic findings which logically support the ultimate finding that public convenience and necessity requires operation of the Denver-Los Angeles route by Western," the brief states.

The brief supports the finding of the Board examiner who found that the route is a segment of a Great Circle transcontinental route and therefore should be operated by a transcontinental carrier and quotes from the Board's own words: "It thus appears clear that the interest of a large portion of the traveling public on the proposed route.

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CAB Proceedings

(A Summary of Applications Filed, Orders Issued, and Future Actions of the Civil Aeronautics Board.)

Orders:

- 4111—Cancelling the temporary exemption orders under which American Airlines was serving Palm Springs, Calif., on a flag-stop basis for members of the armed forces. (Docket 721)
- 4113—Denying an application of Atlantic-Western Airlines, Inc., for a temporary exemption order for permission to serve Bristol, Va., a point on its intrastate route, through McKeller Field, Tenn. (Docket 2058)
- 4114—Consolidating the application of Mid-Southern Air Lines, Inc., in Docket 2079 with the Mississippi Valley Case. (Docket 548 et al.)
- 4115—Authorizing the City of Baker, Ore., to intervene in the West Coast Case (Docket 250 et al.) and denying a similar request to intervene filed by the Baker County Chamber of Commerce.
- 4116—Authorizing Pan American Airways to suspend service at Pointe à Pitre, Martinique, for a 90-day period from Oct. 18.
- 4117—Authorizing public disclosure of Dockets C-4 and C-11 and redesignating both cases as Dockets 2093 and 2094 respectively.
- 4118—Amending the foreign air carrier permit of the British Overseas Airways Corporation (BOAC) to conform with its winter operating pattern between the United Kingdom and Baltimore via Lisbon, points in West Africa, Trinidad and Bermuda. (Docket 2072).
- 4119—Authorizing the consolidation of Northeast Airlines' Routes 27, 65 and 70 into the single Route 27; approving mail service over the old Mayflower route (formerly Route 70); and separating the foreign authorizations from the domestic routes under a separate certificate designated as Route 27-F. (Dockets 1084 and 1607).
- 4120—Approving an agreement between United Air Lines and TWA relating to refilling by United of oxygen bottles for TWA. (Agreement C.A.B. No. 436).
- 4121—Removing from classified status, Pan American Airways' Docket C-4, C-9, C-10, C-12, C-13 and C-14 and assigning the wartime proceedings for service pattern amendments contained in those Dockets to the open Docket 2109; American Export Airlines confidential Docket C-5 removed from classified status and assigned Docket No. 2110.
- 4122—Dismissing the applications of R. C. Bowen, Docket 1521; Milky-Way Transport Corporation, Docket 885; Southern Aviation Corporation, Docket 1775; and Dixie Airways, Inc., Docket 1978, from the Mississippi Valley Case (Docket 548 et al.) at the applicants' requests.
- 4123—Consolidating the applications of the Ark-La-Tex Aviation Corp., Docket 2099; Magnolia Airways and Aviation Co., Docket 2106; and National Airlines, Dockets 1163 and 1384, with the Mississippi Valley Case. (Docket 548 et al.)
- 4124—Authorizing the Commissioners Court, Jefferson County, Texas, to intervene in the Mississippi Valley Case. (Docket 548 et al.)
- 4125—Extending the expiration date of Pan American Airways' trans-Atlantic winter service pattern exemption order to March 31, 1946.
- 4126—Authorizing Pan American Airways to utilize La Guardia Field, New York; Gander Field, Newfoundland; Shannon (Rineanna) Airport, Eire;

Calendar:

- Dec. 3—Oral argument in the National Airlines-Caribbean-Atlantic Airlines Acquisition Case. (Docket 1907 et al.) 10 a. m., Room 5042, Commerce Building.
- Dec. 3—Hearing on the application of Compania Cubana de Aviacion, S. A., for an Havana-Miami foreign air carrier permit. (Docket 1897).
- Dec. 10—Hearing on the application of Aerovias Nacionales de Colombia, S. A. (AVIANCA) for Bogota-Balboa and Barranquilla-Miami foreign air carrier permits. (Docket 1983) 10 a. m., Room 5132, Commerce Building. Examiner Charles J. Frederick.
- Dec. 12—Oral argument in the South Atlantic Case. (Docket 1171 et al.) 10 a. m., Room 5042, Commerce Building.
- Dec. 17—Hearing in the Board's Investigation of the Universal Air Travel Plan. (Docket 1939). Examiner Charles J. Frederick.
- Jan. 14—Hearing in the Middle Atlantic Case. (Docket 674 et al.) Examiners Charles J. Frederick and Richard A. Walsh.
- Feb. 5—Hearing, Kansas City-Memphis-Florida Case. (Docket 1051 et al.) Tentative.
- April 1—Hearing on Pan American Airways' application for U. S. domestic routes. (Docket 1803).

and Hurn and/or Bovingdon Airports, England, in its North Atlantic landplane service.

- 4127—Approving an agreement between Pennsylvania-Central Airlines Corporation and American Airlines relating to air conditioning of American's planes at Cleveland. (Agreement C. A. B. No. 449).
- 4128—Dismissing from the Mississippi Valley case for failure to exchange exhibits the applications of: Arkansas Motor Coaches, Ltd., Docket 1000; William G. Clark, Docket 1414; Coast Air Express, Dockets 1342 and 1805; Denco Bus Lines, Docket 1524; Dixie Airways, Docket 1245; Lank and Stoval, Docket 1691; E. R. Leonard, Docket 1648; Mercury Development Corp., Docket 575; Plaza Express Co., Docket 1185; Rebel Air Freight, Inc., Dockets 745 and 746; Springfield Flying Service, Docket 1319; and E. W. Wiggins Airways, Inc., Docket 1293.
- 4129—Authorizing the Cities of Emporia, Kansas, Galveston, Tex., Quincy, Ill., and Sedalia, Mo., All American Aviation, Inc., and Southern Airways, Inc., to intervene in the Mississippi Valley Case. (Docket 548 et al.)
- 4170—Approving an agreement between Pennsylvania-Central Airlines Corporation and American Airlines relating to the sublease by American of hangar space at Buffalo, N. Y. (Agreement C. A. B. No. 443).
- 4171—Severing the applications of Richard Charles Kugel (Docket 1813), and Edward F. Zedeker (Docket 1902) from the Great Lakes Area Case (Docket 535 et al.) for hearing at a later date.
- 4173—Authorizing Pennsylvania-Central Airlines to operate non-stop between Washington and Akron, between Detroit and Youngstown, and between Baltimore and Cleveland on Route 14.
- 4183—Dismissing the applications of Belt Aviation, Inc., (Docket 1124); Brooks Air Line, (Docket

Applications:

Leon R. Alsworth, Naknek, Alaska, for a permanent or temporary certificate or exemption order authorizing non-scheduled passenger and property service in the Bristol Bay area, charter trips between all points in Alaska, and mail service between North Naknek and Ugashik via South Naknek, Egegik and Pilot Point, Alaska. (Docket 2120).

Compania Aeronaves de Mexico, S. A., Balderas 44, Desp. 113, Mexico, D. F. (also c/o Mr. Erwin Balluder, Special Representative, Suite 5800, 135 E. 42nd St., New York, N. Y.) for a foreign air carrier permit authorizing scheduled and non-scheduled mail, passenger and property service between Nogales, Sonora, Mexico, and Tucson, Ariz. (Docket 2122).

Dickinson Airways, Inc., 138 Main Street, Owego, N. Y., for a permanent or temporary certificate authorizing scheduled mail, passenger and property service over a 172-mile route between Elmira and Albany, N. Y., and over a 210-mile route between Ithaca and New York City, both via various intermediate points. (Docket 2121).

National Airlines for amendment of its certificate for Route 31 to designate Newark as co-terminal with New York. (Docket 2128).

National Airlines for a temporary exemption order authorizing the use of Newark as a co-terminal with New York pending decision on National's application in Docket 1537. (Docket 2129).

Northwest Airlines for amendments of its certificate for Route 29 to designate Newark, N. J., as a co-terminal with New York. (Docket 2124).

Puerto Rico Transportation Authority, P. O. Box 3508, San Juan, P. R. (also c/o James E. Curry, Attorney for Puerto Rico Transportation Authority, Tower Building, Washington 5, D. C.) for a permanent certificate authorizing scheduled mail, passenger and property service over 3,114 miles of routes between San Juan and New York; between San Juan and Miami via Ciudad Trujillo, D. R., Port au Prince, Haiti, Kingston, Jamaica, and Camaguey, Cuba; and between San Juan and St. Croix, Virgin Islands, via St. Thomas, V. I. (Docket 2123).

Universal Skyways, Inc., Jeremiah H. Hill, President, 1011 South 17 Street, Springfield, Ill., for a temporary certificate authorizing charter transportation of persons, property and mail between Chicago and Houston and between Chicago and Atlanta both via various intermediate points. (Docket 2113).

1516); and Gerald Middy and James Hooper, doing business as International Airways, (Docket 2060) from the Great Lakes Area Case at the applicants' requests.

4182—Permitting Pennsylvania-Central Airlines to serve Raleigh, N. C., through the Raleigh-Durham Airport; Elizabeth City, N. C., through the Elizabeth City Naval Air Station; Elmira-Corning, N. Y., through the Chemung County Airport; and Rochester, N. Y., through the Rochester Municipal Airport.

4185—Authorizing American Export Airlines to intervene in the proceeding in which Swedish Intercontinental Airlines (S. I. L. A.) is seeking a Stockholm-New York foreign air carrier permit. (Docket 2071).

4186—Dismissing the application of the Trans-Southern Corporation, Docket 1879, from the Kansas City-Memphis-Florida Case (Docket 1051 et al.) at the applicants' request.

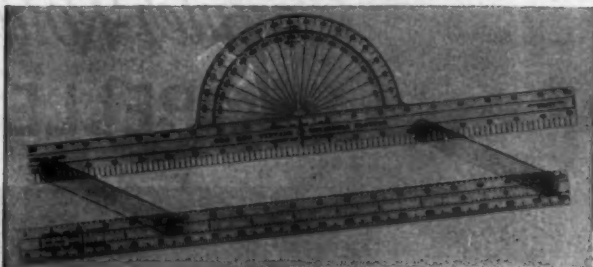
4190—Authorizing Eastern Air Lines to serve Roanoke, Va., through the use of Woodrum Field; Detroit, Mich., through the Detroit City Airport; and Akron, Ohio, through the Akron Municipal Airport.

4191—Denying petitions of American Airlines and Page Airways for reargument and reconsideration of the Washington-Canada Case. (Docket 609 et al.)

4192—Dismissing from the Great Lakes Area Case, for want of prosecution, the applications of: Aircar Service Company, Docket 955; Chicago & Calumet District Transit Co., Inc., Docket 1262; Illinois Air Lines, Inc., Docket 1562; Mercury Development Corporation, Dockets 558 and 586; Milky-Way Transport Corp., Docket 1874; Northern Michigan Airlines, Docket 1236; Plaza Express Company, Inc., Docket 1877; and Tri-State Aviation Corporation, Dockets 1248 and 1249.

4193—Permitting the City of Evansville, Ill., and the Adkins Transfer Company, Inc., et al., to intervene in the Great Lakes Area Case. (Docket 535 et al.)

4194—Rescinding a previous order under which United Air Lines' service to Red Bluff, Calif., had been suspended since May 26, 1942.

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LORAN Has Potential In Commercial Operations

Navigational System Now Covers Part of Globe

(This is the first of several articles on war developed air navigational aids prepared for AMERICAN AVIATION by the Radiation Laboratory, Massachusetts Institute of Technology, and based on work done for the Office of Scientific Research and Development.)

AIR navigation by commercial airlines plying between continents can be improved tremendously in the postwar era by the use of LORAN (Long Range Navigation according to D. Davidson, a member of the M. I. T. Radiation Laboratory project which developed LORAN as a wartime measure. The military LORAN system, he points out, currently provides coverage for three tenths of the earth's surface, and the service is available to any aircraft equipped with the required receiver-indicator—an installation weighing only 35 lbs. in the latest models, and consuming a mere 150 watts. Further, it is possible for the navigator to obtain and plot a LORAN fix within an average time of three minutes.

Satisfactory receiver-indicators exist in quantity, and can no doubt be procured through surplus property agencies or through the Services and the manufacturers.

The training of navigators and mechanics, however, still has to be considered seriously, for while wartime training methods produced respectable results, they were often inadequate, hurried and lacking in comprehensiveness. For a time, according to Davidson, the airlines may depend on some capable men discharged from the armed services, but eventually a thorough training program will need to be inaugurated. It is considered that a two-week training course will turn a navigator into a skilled LORAN operator, and that a ten day training course will enable electronic technicians to service the equipment.

LORAN is an hyperbolic navigation system which employs chains of shore-based radio transmitters typically sited 350 mi. apart. Members of the chain operate in pairs, each pair generating a family of position lines which are forever fixed with respect to the earth's surface and hence can be calculated and printed once and for all upon a chart of the region. Each position line is characterized by a unique and constant time difference along it of the signals from the two stations concerned.

A navigator in the service area, with the aid of a LORAN receiver-indicator, reads the time difference associated with the pair of signals, and finds he is on a certain position line. To obtain a fix, he then reads the time difference associated with a second pair of stations whose position lines cross those of the first pair. The intersection of the two position lines determines the fix. No involved calculations are required, simple interpolation of the printed lines on the chart being sufficient.

The signals emitted by the stations are short bursts of energy of about 40 micro-

seconds duration called pulses, and each pulse occurs about 25 times per second. One station in each pair is designated as the reference station (the master) and the mate (the slave) synchronizes the emission of its pulses rigidly and accurately to those of the master.

When more than one pair is established, it is customary to operate double stations—that is, stations that are members of two adjacent pairs. Thus a chain of four stations furnishes three pairs, and hence three sets of position lines. The navigator distinguishes between pairs by the different pulse rate assigned to each pair.

As many as eight pairs may operate on a single radio frequency channel, thus conserving space in the spectrum. The present world coverage, for example, stems from about 70 stations using only three radio frequency channels.

A frequency in the 2 mc range is employed currently for LORAN, and this accounts not only for its being primarily an overwater system, but also for its long range aspects. During daylight, it is possible to obtain ranges of 800 mi., while at night this is more than doubled due to the sky wave phenomena.

The LORAN receiver-indicator is capable of reading to one micro-second, and the synchronization of stations is maintained to a similar figure. Along the baseline between the stations it thus is possible to have a position line accuracy of better than 1,000 ft., while at great distances from the stations, fix accuracy is better than 1 percent of the distance to the center of the baseline. This is at least equal to or better than that of a celestial fix, and surpasses many fold the accuracy of any radio direction finding system. LORAN further provides by its disposition of chains frequent opportunity to take three or four different position line observations for checking and re-checking fixes.

Since LORAN furnishes several thousand position lines per pair (the longer the base line, the more position lines), it unlike a system of radio ranges permits great flexibility in the choice of track between terminals under variable weather conditions. And LORAN fixes can be taken satisfactorily even when the static is heavy enough to disrupt normal radio aids.

LORAN operations began in 1942 with the establishment of the North Atlantic Chain. This now covers from Cuba to Norway and from Labrador to France. In the Pacific coverage extends from California to Japan and from the Aleutians to Australia. And in the C-B-I theatre, chains provide coverage in the Bay of Bengal and over the Hump into China.

The Air Transport Command has had a large number of C-54s fitted with LORAN, and to date, has schooled about 250 contract carrier navigators in the system. A total of about 90,000 sets of LORAN shipboard and airborne equipment was produced for the Allies during the war.

LORAN ground stations have been operated by the U. S. Coast Guard, Royal

Canadian Navy, Royal Navy, Royal Air Force, and U. S. Army Air Forces. Ground station serviceability is upward of 98 percent, and 24 hour service is maintained. It is expected that these agencies will continue to control ground station operation in the postwar period.

Production and distribution of LORAN charts has been handled by the U. S. Navy Hydrographic Office.

Future developments, according to Davidson, will undoubtedly include satisfactory extension of LORAN service over land to an extent comparable with present over water service; increased range over water both by day and night; increased accuracy of station synchronization; indicators which display the time difference directly on a counter, yet are no heavier than current models; and finally, a tie-in which will allow homing along a LORAN position line by the automatic pilot.

In conclusion Davidson points out that the airlines have interests along routes which in some cases take them out of present LORAN coverage, and suggests that as users, they should present arguments for the establishment of chains in new areas. He adds that they must also, for the sake of the art and of safety, insist on high standards in equipment, charts, stations and station operation.

CAA Plans Procedures to Hike Efficiency of Weather Flying

Future plans as proposed by the Civil Aeronautics Administration for improving air traffic control were discussed by Glen A. Gilbert, chief, Air Traffic Control Division, CAA, in a recent speech before the Institute of Radio Engineers in Dayton.

They included: (1) Elimination of voice as a communication medium for air traffic control; (2) Establishment of facilities and development of procedures which will permit the flow of air traffic during instrument weather conditions in the same volume and with the same frequency as is possible during contact weather conditions; and (3) Elimination of the human element in the control of air traffic through the use of automatic devices.

Underground Fueling System Eliminates Use of Trucks

Chicago & Southern Air Lines revealed last fortnight that it has installed an underground fueling system which eliminates the need for the use of fuel trucks in gassing aircraft at Baer Field, Fort Wayne, Ind. This is the first airport on the C & S system to be so equipped.

The new system was manufactured by Bowser, Inc. of Fort Wayne, and provides for storage, pumping, filtering and metering as well as dispensing of the fuel. The gas is pumped directly from underground tanks through strainers and filters incorporated in the system, thus insuring that only pure unadulterated fuel reaches the aircraft's tanks.

Similar systems are in operation at other cities not on the C & S system.

Frequency Allocations Present Major Problem In Telecommunication

IN STRIKING contrast to previous meetings, aviation dominated the recent Inter-American Telecommunications Conference in Rio de Janeiro, and many of the decisions made will vitally affect future air transport operations, particularly if the recommendations of this meeting are adopted by the next World Telecommunications Conference.

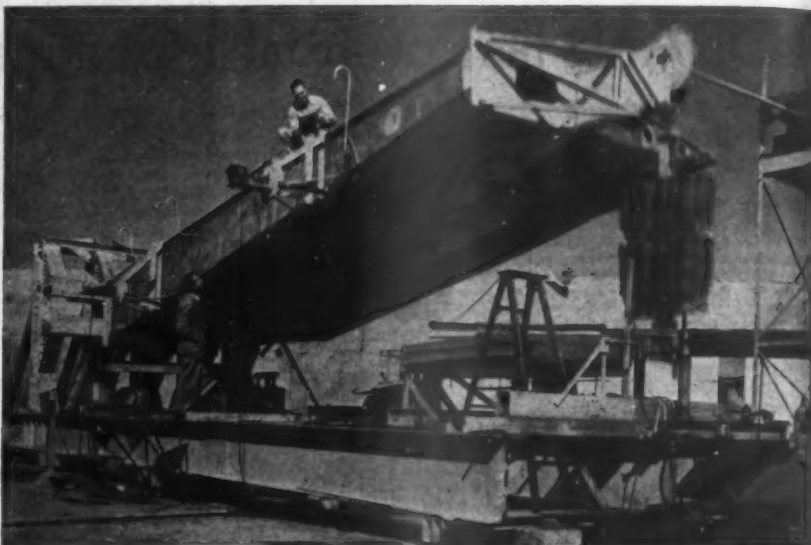
The number one problem on the agenda was the allocation of frequencies, and in general the allocations proposed by the United States for aviation and aeronautical services (AMERICAN AVIATION, Feb. 1) were adopted without opposition. The principal objection to the American proposals was raised by Canada in connection with the 200-225 mc band which was assigned to broadcasting, fixed and mobile services, but which the Canadians believe should be retained for air navigational aids, for the time being at least, in order to permit the use of existing radar and pulse beacon equipment on these frequencies. Canada also proposed that the 420-450 mc band be assigned exclusively to air navigational aids rather than be shared with amateur.

Suggest Band Assignments

Other minor proposed changes included a suggestion from Mexico that the 5400-5500 kc band be assigned to fixed aeronautical service; a second proposal by the same company that the 1605-1800 kc band in Latin America be assigned for omnidirectional air navigational aids during the day; a suggestion by Colombia that this same band be assigned to air navigational in the Southern zone with a 500 watt power limit; and a proposal by Brazil that the 1615-1715 band be limited to air navigational only. Canada further proposed that the 230-320 kc band should be available for air navigational in areas where harmful interference to maritime beacons will not result.

The conference further resolved that questions relating to the utilization of the facilities granted to the aeronautical services by international radio conventions should be resolved by the competent international and regional aeronautical organizations, and that the countries which are not parties to these organizations bind themselves to endeavor to the greatest possible extent, within their own laws, to comply with the decisions of said organizations with a view to standardization and uniformity in aeronautical radio communications.

Due to the great number of proposals related to aviation submitted to the conference, and the fact that many of these proposals and problems were considered to be within the scope of the Provisional International Civil Aviation Organization of which many of the participating countries were members, it was recommended that all records of the conference pertaining to civil aviation, regardless of whether or not they had been acted upon, should be transmitted by the Secretariat to PICAO for its information, study or action.



This steel jig enables Lockheed Engineers to make dynamic tests on wing structures. Note blur in photo, denoting vibration on wing.

Frequency Alphabet

A major contribution to the understanding of the radio spectrum by laymen was made by the Inter-American Telecommunications Conference when it defined the scope of the various frequency bands. The various ranges follow:

Very Low (VLF)	Below 30 kc
Low (LF)	30-300 kc
Medium (MF)	300-3,000 kc
High (HF)	3,000-30,000 kc
Very High (VHF)	30,000-300,000 kc
Ultra High (UHF)	300,000-3,000,000 kc
Super High (SHF)	3,000,000-30,000,000 kc

Study Reduces Flight Hazards In Weather

Details of a study of "precipitation static"—a type of radio interference experience in aircraft flying through light crystalline snow or in heavily-charged thunderstorm area, were made public by the Army and Navy last fortnight.

The investigation, still underway, is being carried out by a joint Army-Navy committee with the cooperation of other groups including the National Advisory Committee for Aeronautics, the Naval Research Laboratory of the Office of Research and Inventions and the Air Technical Service Command.

The investigation was undertaken in an effort to reduce flight hazards to aircraft whose radio and navigational equipment becomes wholly inoperative under certain electrical conditions encountered in certain types of weather. Under these conditions, radio communication and navigation are impossible and flying is extremely hazardous.

Lockheed Develops Jig To Test Structure Of Constellation Wing

RESearch engineers at Lockheed Aircraft have developed an ingenious steel jig which enables them to make dynamic tests of wing structures on the Constellation under simulated conditions of actual flight and to measure the life expectancy of the wing.

Significance of the new device, according to Hall L. Hibbard, Lockheed vice-president and chief engineer, is that henceforth many of the uncertainties of first flights are removed by "flying" new airplanes on the ground prior to initial test flights.

"Never before have aircraft designers and engineers been able to observe firsthand the effects of flight on a plane's internal structure," said Hibbard. "Now engineers have the chance to test radical new designs or new materials on the ground under actual flight conditions without subjecting crew members and costly equipment to risks of experimental flying."

In the Constellation tests made in the jig, the wing was subjected to loads that caused it to bend as much as 18 inches out of line. While engineers peered through access openings, dozens of tiny electronic strain gauges recorded minute variations in the structure as the wing was "flown" for more than 3,500 hours. Ribs, spars, beams and skin surfaces, ordinarily hidden in flight, were observed directly by their designers.

The engineers also were able to test various methods for sealing fuel tanks constructed as an integral part of the wing.

During the "flight" tests, the wing was shaken for hundreds of hours by electrically operated devices that made the metal structure flutter with 170 vibrations each minute. Other smaller devices spun at 1,800 rpm to simulate engine vibration.

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- Cleveland will be the aviation center of the world — January 11 through 20 — when the National Aircraft Show brings to Cleveland Public Auditorium outstanding personalities of the aviation industry . . . leaders of the Army Air Forces . . . aviation organizations and the largest number of Army planes and devices used in the War — along with the latest civilian planes of the present and coming air age ever shown in one exposition.
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Engineering Preview

CONSOLIDATED-VULTEE is reportedly working on a 4-6 engine jet propelled bomber for the Army. The Convair ship is designed to the same specification as the Martin XB-48. Boeing and North American are likewise designing bombers to this specification.

Rumor has it that TWA is not only interested in an Allison powered version of the DC-6, but may also have Allison engines installed in one or more converted C-54 Skymasters.

First prototype of North American's four-place personal aircraft should be flying by February. Two prototypes will be built. The ship is a conventional, all-metal, low-wing monoplane design, and will provide a 40 lb. per passenger baggage allowance with a full fuel load and instruments. The prototypes will be conventionally powered, and not with the General Motors two cycle engine.

The helicopter which McDonnell is building for the Navy will have twin, contra-rotating main rotors, rather than a single main and tail rotor as first supposed.

The principle of the Elme control was tried out experimentally by the Army at Wright Field using bicycle handle bars instead of a wheel. It was finally abandoned because the control forces on military aircraft forced the pilot to keep two hands on the wheel at all times.

Military pilots who hope to convert military aircraft such as the B-25 for deluxe charter service had better check on certificability before investing any money. While stall speeds have been eliminated for multi-engined aircraft in both Parts 03 and 04, and military types have sufficient power to meet climb requirements, there is a joker in the form of allowable stick forces with one engine in operative. Most military types are too heavy on the controls to meet this requirement as the Navy learned when it tried to get the PB2Y certificated for an undisclosed operation into neutral countries.

Now that the CAB has decided Part 03 and copies have been circulated to the manufacturers by the Airworthiness Requirements Committee of the Aircraft Industries Association of America, work on new personal aircraft should proceed rapidly. Among those ready for flight testing are the Culver "V", the two-place, all-metal high-wing Cessna, and the four-place, all-metal, low-wing single-engined Beech.

One of the first reported results of the Republic Aviation-Alcooled Motors merger will be a study of the possibility of equipping the Franklin engine for fuel injection to eliminate carburetor and carburetor icing problems.

Industry talk now has it that the 20-passenger feederliner recently referred to by Oliver Parks is not the Lockheed Saturn, but a new design by Beech which has been mocked-up and will be unveiled shortly to members of the Feeder Airline Association.

American Airlines is still undecided both as to its future twin-engined domestic and large four-engined overseas transports. The former may end up with the Martin 202 and/or Consolidated 110 for passengers, and the Douglas DC-8 for cargo.

Consolidated is understood to be redesigning the landing gear of its Model 37 to provide for multiple wheels. The advantages to be gained are obvious, but the big problem to date is where to retract them.

The Constellation is said to be one of the few large aircraft in existence which is designed to withstand spin loads. Lockheed engineers, according to reports, didn't want to overlook this possibility, since it was conceivable that the ship could be thrown into a spin by severe gusts.

The Aeronca Champion is one of the nicest flying and stablest lightplanes we've flown to date. It will practically stand on its tail with full power before snapping into a stall, and even then doesn't tend to go off on a wing.

SYDNEY CARTER

Martin Signs Contracts for 202 Transports

Company Reports Backlog; Declares \$1.50 Dividend

THE Glenn L. Martin Co., last fortnights disclosed that it has commercial orders and a military backlog totaling \$121,000,000—\$17,000,000 of which is represented in contracts for the new 36-passenger Martin 202 transport.

Contracts for 50 of the 202s were signed with Eastern Air Lines at a cost of more than \$10,000,000, and with PCA for 35 of the aircraft at a cost of \$7,000,000. Deliveries are expected to begin in January, 1947.

At the same time Martin announced orders from eight airlines for conversion of C-54 transports, at an expenditure of \$12,000,000. Delivery schedules will begin in December, and reach one aircraft a day in January, 1946, the company said.

Carriers participating in the C-54 contracts are PCA, TWA, Eastern, Pan American, Braniff, Northeast, Chicago & Southern, and Cruzeiro do Sul, Brazilian carrier.

Martin directors meeting Nov. 16 declared a semi-annual dividend of \$1.50 on the common stock, payable December 21 to stockholders of record Dec. 10, 1945.

Reporting to the directors on the 202 orders, Glenn L. Martin, president, said: "We have reason to believe that this 30 to 40 passenger aircraft . . . will become the standard transport type in the short and medium-range field."

E. V. Rickenbacker, president of Eastern, said that his company would use the 202 in addition to its present fleet of DC-3s, and 40 four-engine transports—20 each of the Lockheed Constellation and DC-4s.

Rickenbacker said principal effects of the addition of the 202s would be to increase cruising speeds by more than 100 mph over present two-engine equipment, to lower operating costs, and to provide greater passenger comfort and convenience.

The transport will be designed so that passengers may board or leave it through the front and rear entrances.

Northrop Announces New Jet-Propelled Buzz Bomb

Development of a jet-propelled buzz bomb which could be launched from landing craft was announced today by Northrop Aircraft. Designated the JB1A, it has a 30-ft. wingspread and was powered by a single jet engine. Gross weight is 7,000 lbs. and 3,700 lbs. of explosives are carried. The JB1A can be launched from a 50-ft. platform, from which it is catapulted into the air at 220 mph with the aid of four rockets.

Northrop said that it had been manufacturing the JB1A since the summer of 1944, but gave no indication as the quantity turned out or the number produced. It did state, however, that it had completed delivery of 1,000 launching sleds.



C. Bedall Monro, president of PCA, and Glenn L. Martin look over a model of the 202.

Republic Aviation To Purchase Engine Firm; Gets Franklin Rights

Republic Aviation Corp. has entered into agreement to purchase outright the Aircooled Motors Corp. of Syracuse, N. Y., according to Alfred Marchev, Republic president. Purchase for \$1,500,000 of Aircooled Motors brings to Republic all rights for manufacture of the Franklin airplane engines, to be used in the Republic Seabee amphibian. A current backlog of \$2,000,000 exists in contracts for engines from Bell Aircraft Corp., Stinson Division of Convair, and the AAF. No changes in personnel of the engine company is seen; all officers will remain in their present posts.

Continental Motors Corp., Muskegon, Mich., is starting deliveries of three new 6-cylinder aircraft engine models for lightplanes and by the end of the year will have four additional 6-cylinder models in production. C. J. Reese, president, has announced. When all are in production, Continental will offer engines ranging from 65 to 210 hp. All the 6-cylinder engines are air-cooled, horizontally-opposed jobs similar to the company's 4-cylinder models. In addition, Continental will produce 7 and 9-cylinder radial engines for larger planes. The 9-cylinder job, rated at 525 hp. is to be used in a medium weight craft made by a large aircraft manufacturer. The 7-cylinder engine is basically the same as the company's pre-war R-670 which was adopted by the Army and Navy as standard for primary trainers. It is rated at 220 to 240 hp.

Palmer Appointed To New Position With Fairchild

Richard C. Palmer of Washington, D. C., has been appointed special assistant to the president of Fairchild Engine and Airplane Corporation, according to an announcement by J. Carlton Ward, Jr., president. He will be located in Washington, where he has been active for the past 14 years.

West Coast Aircraft Plants Move Ahead With Reconversion

FOUR West Coast aircraft plants moved ahead with reconversion last fortnight, with one seeking aeronautical engineers and other skilled help in order to complete advanced tooling and flying models on six different secret-type aircraft.

The latter manufacturer was North American Aviation, which announced completion of its P-51H contract and that it was moving directly into engineering and development of the six secret aircraft. Five thousand employees have been transferred to the new project.

Solar Aircraft Co., announced, meantime, that it has received several contracts from the Oakridge Ordnance Plant, operated by Clinton Engineering Works, near Knoxville, Tenn., for fabrication of stainless steel parts used in manufacturing the atomic bomb. The parts will be made at Solar's Des Moines plant.

Solar also announced an expanded diversification of post-war products at both its Des Moines and San Diego plants. Included is the company's new triple unit exhaust system for use on smaller sport and commercial aircraft.

The San Diego plant already has started manufacture of a line of parts for midge automobile racing cars, including stainless steel frames, wheels and body parts.

Solar said that as of Oct. 31, unfilled orders covering both plants totaled \$6,402,811.

Lockheed Aircraft Corp., announced expansion of its newly created customer service division at Lockheed Air Terminal, Burbank. The division has begun conversion of a Lodestar for Waterman Airlines, Inc., a wholly owned subsidiary of the Waterman Steamship Co.

Waterman proposes to operate an intrastate airline between Mobile and Muscle Shoals, via Montgomery and Birmingham, Ala. Samson Held, former Lockheed test pilot, has been employed by Waterman to supervise conversion of the plane and to check out pilots.

Expansion of the customer service division includes installation of five new hangars. Three of the hangar, totalling 100,000 square feet, will be used for manufacturing, storage facilities for executive type transports and a special service section for Constellations. The other two will be leased to commercial airlines.

Douglas Aircraft Co., moved ahead on a speeded delivery scheduled on reconverted C-54s, but doing conversion work at both its Santa Monica and El Segundo plants. The company has orders from Pan American, TWA, American Overseas, United, Delta, and Western Air Lines.

Deliveries to Pan American began last month and were to continue on a one-a-week basis through remainder of the year for the conversion of eight 38-passenger C-54Es.

RFC Seeks to Salvage Light Metals From Surplus Aircraft

Scrapping Program Underway At Selected Large Bases

By EDWARD W. PIERSOL

MAJOR headache plaguing the surplus aircraft disposal program is the problem of how to dispose of the 40,000 combat aircraft expected to be glutting RFC storage centers by next June. Ten billion dollars' worth of equipment, these craft are practically useless for commercial purposes because of their high

operational cost. The hundreds of millions of pounds of aluminum and other light metals they contain, on the other hand, constitute a great national asset.

To retain this the RFC is striving to convert the collection of obsolete aircraft into a "mine above the ground" that can be worked for years. The light metal and smelting industries have been consulted constantly in the agency's study of how to scrap the planes. The most economical method of accomplishing this has yet to be determined. Aircraft scrap will pro-

duce an aluminum alloy different from virgin aluminum; one not adaptable, too often, to many uses such as new aircraft or engines. Reclaimed aluminum, however, can be used for hundreds of industrial purposes. The scrap which may approximate a billion lbs., will be fed into the market according to the demand and it may be five years before the last of it is converted into other uses.

To get the metals out of the craft, a large scale scrapping program on a mass production basis will have to be entered. For this reason, the surplus equipment is being concentrated at a few large fields, where the supply will be great enough to permit large operations. Such a center is Walnut Ridge, Arkansas, one of the six principal fields used by the RFC for storage of surplus military tactical types. Others are located at Altus and Clinton, Okla.; Kingman, Ariz.; Augusta, Ga.; and Ontario, Calif. RFC operations at Walnut Ridge are concerned primarily with the storage of aircraft, salvaging of useable equipment, and preparation for scrapping.

Among the 5000 combat aircraft here are 87 of the 124 B-32's produced. Ten percent of these, incidentally, will be "pickled" at the field, and the rest will undergo the scrapping route ahead for the rest of the craft. Excluded may be the 170 surplus early model transports which are available for sale. A sales lot is also operated in conjunction with the field at which are available aircraft of types suitable for civil use. The bulk of saleable types, however, has already been declared surplus and sold. Most surplus craft, from now on, will largely consist of combat planes of only scrap value.

The final answer on scrapping methods may well come from the Navy which, for some time, has been scrapping and smelting non-flyable aircraft such as those involved in crashes or others damaged in storms and hurricanes. It is not feasible to ship these to RFC scrap depots because the cost of transportation would exceed the value of the scrap. In order to clear its air stations of scrap, the Navy has been operating small smelters at some locations and open pots at others. These processes produce an aluminum alloy ingot which is used for fluxing in the steel industry. Demand for this low-grade ingot, however, is limited.

The Navy is now constructing large furnaces at Naval Air Stations in San Diego, Miami, Norfolk, Jacksonville, and Alameda. Meanwhile before craft are consigned to the torch, they undergo a careful and thorough stripping of useable parts such as the hydraulic system, instruments, tires, propellers, engines, etc. At Jacksonville, alone, during the past six months, the Navy has salvaged more than \$6,000,000 worth of equipment—exclusive of engines, radio and radar equipment, tires and ordnance material, etc. About a million and a half pounds of aluminum scrap obtained by cutting up aircraft have been sold from the Yard to private industry, mainly for experimental purposes.

In setting up its furnace operations, the Navy is working to produce an ingot that the aluminum industry can work into various industrial specifications. The Jacksonville furnace, scheduled to be finished the end of the year, will have a 10,000 lb. capacity, reducing scrapped planes to 25 lb. ingots whose aluminum purity should be 94%.



Mewhort

Peterson

Allard

Brig. Gen. John S. Allard is returning to Curtiss-Wright Corp., with which he was a vice-president before entering the Army in July, 1942. He served as chief of staff of the Eighth Air Force.

William D. Mewhort has been appointed treasurer of Menasco Manufacturing Co. He joined the company last April 15 as acting treasurer.

Carl J. Snider has been named assistant to the chief engineer in charge of development of aircraft hydraulic testing machines and maintenance equipment by Greer Hydraulics, Inc.

Cliff Johnson has been named to Douglas Aircraft Company's public relations staff. He formerly was a public relations representative for North American Aviation.

Robert V. Kerley has been appointed director of aeronautical research for Ethyl Corp., succeeding S. B. Heron who is retiring from this division to become a special consultant for Ethyl.

Lewis A. Rodert, pioneer in heat-deicing systems for aircraft, has joined the research staff of Stewart-Warner Corporation's heater plant at Indianapolis.

Miss Lee Koutz, former member of the WASPS, has been named to the personal aviation radio sales staff of Bendix Aviation Corporation's radio division.

Col. Thomas A. Murphy has been appointed aviation industry manager for the Reynolds Metal Co. He was formerly assistant to the president of United Aircraft.

C. E. (Jack) Reid has been named manager of the Los Angeles branch of Air Associates, Inc.

Julian Loebenstein has been appointed sales manager of the new Selenium Rectifier Division of Radio Receptor Co., New York. F. G. Harlow was



Rodert

Koutz

Kerley

named Washington and government representative for the company.

William Wiseman has been appointed assistant chief engineer in the aircraft division of Continental Motors Corp.

Albert H. Charlton has been named sales manager of the Aluminum Division of Reynolds Metal Co., Louisville, Ky. He formerly was eastern sales manager for the Aluminum Division.

Henry P. Nelson, former director of the Aircraft Division of the War Production Board, has been appointed eastern manager of Menasco Manufacturing Co.

Lt. Com. Frank W. Jones has been named head of the light metals products division of Northrop Aircraft.

W. L. Wilkinson has been named sales manager and Dan Young and William H. Quade, Jr., assistants, of Solar Aircraft Co. Walter Cerny has been promoted to director of engineering at Northrop.

R. A. Bailey has been named chief engineer of Laister-Kauffman Aircraft Corp., replacing the late Randall Chapman.

Eugene Norris, former director of service of the Aircraft Industries Association, has joined Luscombe Airplane Corp., Dallas, as chief engineer.

F. J. Baum has been appointed Dayton, O., representative of Northrop Aircraft, succeeding S. E. Weaver, who has returned to Northrop Field for a new assignment.

John Snare, Jr., has been named director of public relations of Bell Aircraft Corp., succeeding Stephen E. Fitzgerald, resigned.

Ivar C. Peterson has been named director of the Technical Service of Aircraft Industries Association.



Loebenstein

Harlow

Charlton



Young

Quade

Wilkinson

Financial House Predicts Lower Airline Costs

Survey Sees No Let-Down In Profits in Peace-Time

U. S. DOMESTIC air transportation owes its transformation from an industry depending on the contribution of public funds into a self-sufficient and profitable business to the peculiar economic conditions of the war years which have resulted in an advance of 250%-300% in the volume of business.

So states "A Memorandum on Transcontinental & Western Air, Inc." by Carl M. Loeb, Rhoades & Co., members of the N. Y. Stock Exchange, in a chapter on "Earnings Prospects and Capitol Requirements." Noting the airlines were unable to break even on the volume attained before 1940, the analysis points out that only with air travel two times the pre-war size could overhead be absorbed and equipment and personnel utilized economically.

Capacity operations due to a greatly increased demand for the airlines' services combined with a reduction in the number of craft available for commercial purposes lifted revenues per plane-mile. At the same time the lines experienced a steep increase in costs not compensated by higher rates.

The next few years, the study predicts, should bring a substantial decline in operating cost through introduction of faster, more economical equipment. At the same time, the lines should be able to maintain the frequent schedules established during the war. The load-factor should decline gradually from the present abnormal level as more craft become available. This will not, however, outweigh strides to be made in cutting down the flying cost per seat-mile. Thus, the report concludes, costs per passenger-mile will decline on balance, despite the re-appearance of empty seats.

"Cost, however, is not the only determinant of earnings, since fares will follow the downward trend of operating expenses. The margin left to the companies could be judged more easily if not complicated by the unknown factor of regulation. In a rapidly growing industry, pre-tax profits usually approximate 20%-30% of sales. This was the range actually reached by the leading airlines in 1944.

1944 Earnings Before Taxes in % of Revenue

TWA	American	Eastern	United
19.0	24.1	30.3	31.9

"Profits within this range before taxes will, we think, be largely maintained despite the intensified struggle for air travel caused by the recent awards of competitive franchises, and despite the larger number of seats waiting for passengers on every flight, once the new equipment becomes available."

On the basis of available projections of equipment purchases, expansion of ground facilities and requirements for working capital, the analysis discloses that an airline like TWA planning for \$100,000,000 of revenue several years hence will require total assets (at cost) of approximately \$80,000,000. This compares with total assets of TWA (as of the end of 1944) of

\$25,000,000. The large additional capital requirements can be satisfied, the memo recommends, from the following sources: (1) sale of new securities; (2) accumulation of cash funds through retained earnings and depreciation charges; (3) recourse to currently available excess working capital.

TWA's Third Quarter Earnings Show Hike

AN INCREASE in third quarter earnings over the previous two quarters of 1945 is reported by Jack Frye, president of Transcontinental and Western Air.

Earnings for the first nine months totaled \$1,660,072, or \$1.69 a share after taxes and certain non-recurring charges, Frye said. Earnings in the first six months totaled \$1.05. Third quarter earnings thus were at a rate of 64c, compared to an average of slightly more than 50c for the first two quarters.

Compared to the first nine months of 1944, current earnings were 35c less. The 1944 nine-month earnings of \$2.04 were based, however, on a rate of payment for air mail of 60c per ton mile. A recent order of the Civil Aeronautics Board cut the rate to 45c, retroactive to January 1, 1945. This reduced TWA's mail revenue accruals for the first nine months by \$1,851,000.

The 1945 earnings were reported after non-recurring charges of \$779,693 resulting from the sale of non-operating property and issuance of 9,029 shares of capital stock to employees under the company's stock-purchase plan.

TWA's operating revenues continued to mount, totaling \$25,467,776 for the current nine months. This represented an increase of 39% over the corresponding period of 1944, when operating revenues totaled \$18,274,044. Frye pointed out that the increase was achieved despite reductions in both mail and passenger rates during 1945.

The increase in revenues reflected the steadily growing size of TWA's fleet of planes, Frye said. TWA now has 50 DC-3 aircraft and five Stratoliners in operation, an increase of six DC-3 aircraft in operation since the six-month earnings report. In addition, 14 DC-3 aircraft and eight DC-4 four-engine planes soon will be added to the fleet. The DC-4 planes will be used on TWA's overseas routes.

Aviation Corp. Makes Offering

A public offering of 67,374 shares of Aviation Corp. \$2.25 cumulative convertible preferred stock of no par value priced at \$56 per share is being made by Lehman Brothers and Emanuel & Co. This represents the balance of 289,875 of new preferred shares first offered to holders of common, plus an additional 10,325 shares not offered to shareholders. Proceeds will be used in an expansion program aimed at diversifying the corporation's activities and will also be applied on reduction of \$24,500,000 outstanding bank loans. The company said application will be made to list the new preferred on the N. Y. Stock Exchange.

Aireon Reports Sales Drop But Shows Substantial Profit

Aireon Manufacturing Corp. has shifted into peacetime production with a minimum of reconversion problems, Randolph C. Walker, president, disclosed in his annual report to stockholders. Since the close of its fiscal year April 30, the company has added five new subsidiaries, having assets of about \$700,000. Aireon now has total assets in excess of 13% million dollars.

Reflecting the reduced requirements of the armed forces, sales in the fiscal year declined \$6,316,217 to \$32,002,613. Net income after all charges but before renegotiations was \$750,553, equal to \$1.03 a share on the 714,919 shares of common outstanding, compared with \$1,064,041, or \$1.49 a share, in the previous year.

In the first quarter of the current fiscal year unaudited figures show a net profit of \$44,550. Unfilled government orders on July 31 were about \$12,700,000 and during August cancellations aggregated \$8,900,000.

PCA Reports Earnings

PCA's revenues for the first ten months of 1945 totaled \$9,268,944, as compared with \$5,055,818 in the same period of 1944. Net income for this period amounted to \$820,210, after taxes and fixed charges on the Corporation's recently issued 3½ percent 15-year convertible income debentures, or \$1.72 per share. In the same period of 1944, net income was \$427,045 after taxes, or 90 cents per share.

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Over - the - Counter Securities

(Courtesy Merrill Lynch, Pierce, Fenner & Beane)

Airlines	November 10		November 11	
	Bid	Asked	Bid	Asked
All American Aviation	9 1/4	10 1/4	9 1/4	9 1/4
American Airlines Pfd.	called @ 106 1/15/45			
American Export Airlines	88	92	90	96
Braniff	28 sale		27 1/2 sale	
Chicago & Southern common	30 1/4	31 1/4	29 1/4	30 1/4
Chicago & Southern warrants	22 1/4	23 1/4	21 1/4	22 1/4
Continental Airlines	21 1/2	22 1/2	23	24
Delta Air	51	52	60	63
Inland Airways	8 1/2	9 1/4	8 1/2	9
Mid Continent	19 1/2	20 1/4	19	19 1/2
National Airlines	29 sale		29 1/2 sale	
Northeast Airlines	22 1/2 sale		22 sale	
Manufacturers				
Aeronca common	6 1/4	7 1/4	7 1/4	7 1/4
Air Associates	15 1/2 sale		17 1/4	19
Aircraft & Diesel	1 1/4	2 1/4	2	2 1/4
Aireon Mfg.	10 1/2 sale		11 sale	
Airplane & Marine	12 1/4	13 1/4	13	13 1/4
Central Airports	1 1/4	2	1 1/2	2 1/4
Columbia Aircraft	1	1 1/4	1	1 1/4
Continental Aviation	3	3 1/2	2 1/4	3 1/4
Delaware Aircraft Pfd.				
General Aviation Equipment	3 1/2	3 1/2	4	4 1/4
Globe Aircraft	4 1/4	5 1/4	4 1/4	5 1/4
Harlow Aircraft	1	1.30	1 1/4	1 1/4
Harvill Corp. common	3 1/2	3 1/2	3 1/2	3 1/2
Interstate Aircraft & Engine	14 1/2	15 1/2	14 1/2	15 1/2
Jacobs Aircraft			4 1/4	5
Kellett Aircraft	2 1/2	2 1/2	2 1/2	2 1/2
Kinner Motors	2 1/4	2 1/2	2 1/4	2 1/2
Liberty Aircraft common	16 1/2	17 1/4	17 1/2	17 1/2
Luscombe	2 1/2	3	2 1/2	2 1/2
Menasco Mfg.	4 1/2	4 1/2	4 1/2	4 1/2
Northrop Aircraft common	10 1/2 sale		10 sale	
*Pacific Alrmotive Corp.	6 1/2	7	8 1/4	9 1/4
Piper Aircraft common	8 sale		7 1/2	8 1/2
Piper Aircraft Pfd.			75	85
Rohr Aircraft	11 1/4	12 1/4	11 1/4	12 1/4
Standard Aircraft Products	1.95	2.10	2 1/2	2 1/2
Taylorcraft common	4	4 1/2	3 1/4	4 1/4
Taylorcraft Pfd.	called at 11 7/30/45			
Timm	2 1/4	2 1/2	2 1/4	2 1/2
United Aircraft Products Pfd.	21 1/4	22 1/4	21 1/4	22 1/4

* Formerly Airplane Mfg. & Supply Corp.; name changed March 1945.

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AIRLINE CAPTAIN, Age 34. Extensive 4 engine, night and instrument flight experience. 3 years Pacific airline. Qualified navigator. Desires permanent position with organization using airline type equipment. Available January 1st. Box 463, American Aviation, American Building, Washington 4, D. C.

WANTED a pilot with some air line pilot experience to represent a well-established employee-representing organization. This is not a flying position. Executive work only with some travel. Employer-employee relations handling ability necessary. Veteran preferred. Box 449, American Aviation, American Building, Washington 4, D. C.

WATCHES WANTED: Broken or usable—all kinds, even Ingersolls. Highest prices paid for jewelry, rings, spectacles, cigarette lighters, gold teeth, etc. Cash mailed promptly. Lowe's, Holland Bldg., St. Louis 1, Mo.

ANALYSTS WANTED. Progressive, intelligent junior and senior analysts wanted for market and economic research work relative to air transport industry. State age, experience, education and salary desired. Will be obliged to live in the Washington area. Excellent opportunity for career. Send replies to Box 464, American Aviation, American Building, Washington 4, D. C.

AIRLINE PILOT, age 36, A. & E. license, 14,000 hours all types land and sea including four engine transports. Now employed available January 15. No objection to foreign service. References. Write: Apt. 602, Buchanan St., San Francisco, California.

Plans to Buy Culver Fleet

Don R. Mitchell, president of Ypsilanti Reed Furniture Co., Ionia, Mich., plans to buy a fleet of Culver Model V lightplanes for his salesmen and executives who travel about the country. Culver announces. At the same time he has placed his order for the first new Culver to be sold in Michigan.